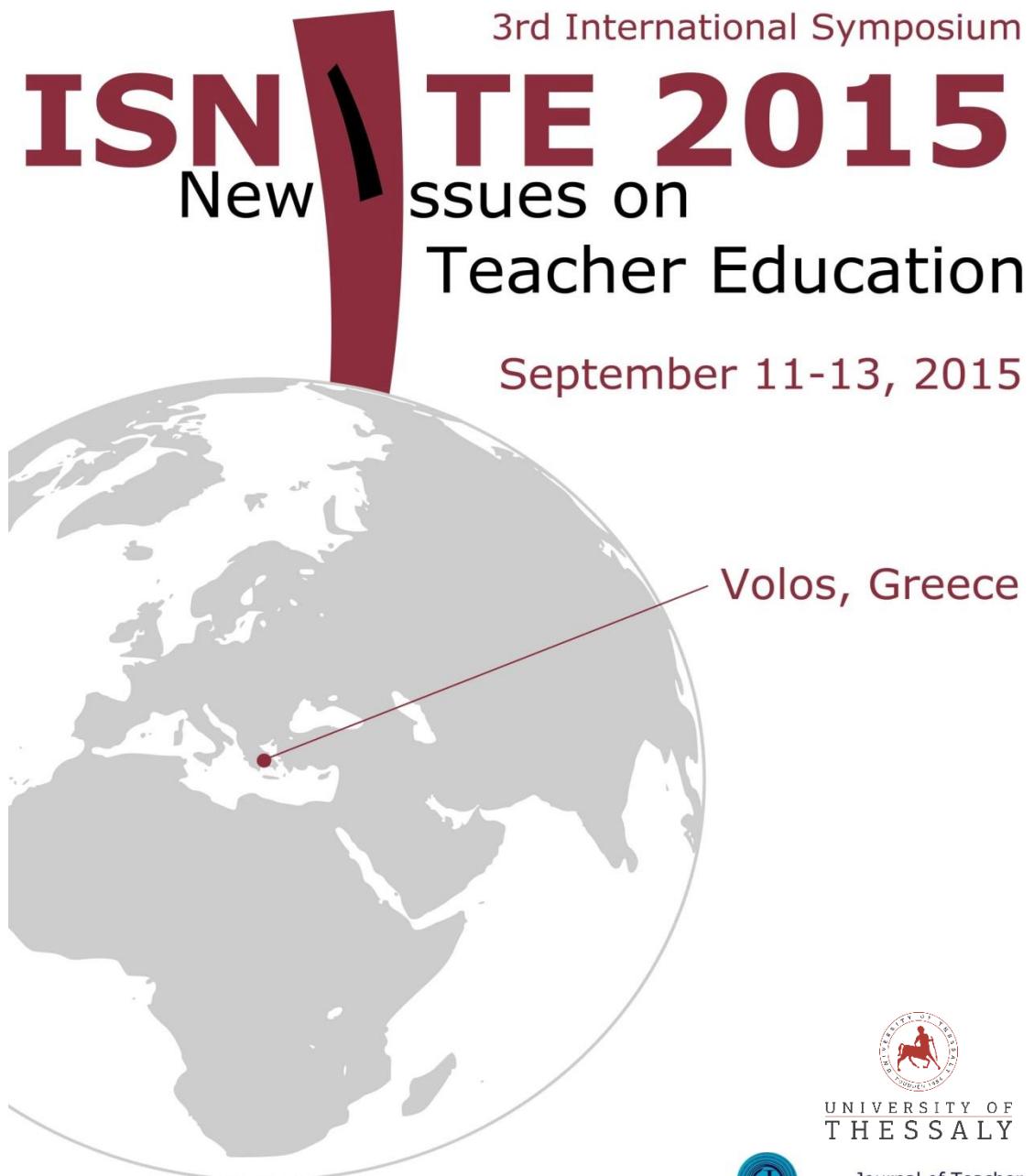


**Proceedings from the 3rd International  
Symposium on New Issues on Teacher  
Education**



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Journal of Teacher  
Education and Educators

# **Proceedings from the 3rd International Symposium on New Issues on Teacher Education**

**Editors:** Domna -Mika Kakana & Polyxeni Manoli

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**Edited by:** Domna -Mika Kakana, Polyxeni Manoli

## **For the proceedings**

Theologia Avdelli, Marianna Lepida & Katerina Veniopoulou, Sonia Likomitrou & Sofia Avgitidou, Apostolia Beka & Stathis Xafakos, Ioannis Dimakos & Athanasia Apostolopoulou, Ertug Can & Hüseyin Çaglar, Anastasios Maratos & Aggeliki Lazaridou, Olga Mpatsoula, Glykeria Reppa & Anastasia Intzevidou, Türkay Nuri TOK & Şükran Tok, Rosy Angelaki, Christine Bourlaki & Domna-Mika Kakana, Despina Desli & Elisavet Galanopoulou, Gerasimos K. Pagiatakis & Nikolaos F. Voudoukis, Lampros Papadimas, Sofia Avgitidou, Penelope Papadopoulou & Petros Kariotoglou, Efthymia Gourgiotou, Marina Sounoglou & Aikaterini Michalopoulou, Nikoletta Avgerinou, Maria Giakoumi, Maria Gkountouma & Maria Kouklatzidou, Anastasia Fakidou & Maria Gotzia, Konstantina Kotsari, Spyros Kourias, Anna Chronaki & Elias Houstis, Aikaterini Mastrokoukou & Emmanuel Fokides, Nikolaos F. Voudoukis & Gerasimos K. Pagiatakis, Katerina Boutsi & Theodora Tsagani, Georgios S. Gorozidis & Athanasios G. Papaioannou, Vassilis Pantazis, Efpraxia Triantafyllou & Georgia Pantazi, Ilknur Savaskan, Spyridon-Georgios Soulis, Eirini Maleskou, Ismini-Charikleia Karatzeni & Vasileios Masouras, Despoina Styla & Aikaterini Michalopoulou, Nikolaos Yfantopoulos, Antigoni-Alba Papakonstantinou & Anastasios Emvalotis, Efstatios Xafakos & Jasmin-Olga Sarafidou, George Androulakis, Mariarena Malliarou, Irene Ntasiou, Vicky Panagou, Iro-Maria Pantelouka & Sofia Tsioli, George Androulakis, Roula Kitsiou, Eleni Paparoidami, Argiro - Maria Skourmalla, Emmanouela Sotiropoulou, Alexia Giannakopoulou, George Giotis, Vasiliki Mitropoulou & Maria Anagnostopoulou, Irini Dermitzaki & Maria Kriekouki, Erhan Dönmez & Türkay Nuri Tok, Vasiliki Karavakou & Genovefa Papadima, Panagiotis J. Stamatis & Athanasios Papanikolaou, Ioanna Georgiadou & Anastasia Vlachou, Domna - Mika Kakana, Katiphenia Chatzopoulou, Magda Vitsou, Eleni Xiradaki & Anastasia Mavidou, Michael Kamoudis, Eleni Mavroeidi & Charalambos Lemonidis, Anastasia Psalti, Natassa Raikou, Maria Kampeza, Thanassis Karalis, George Bagakis, Kafenia Botsoglou & Eleftheria Beazidou, Bahar Çağrı San & Türkay Nuri Tok, Maria Chaitidou, Anna Spyrtou & Petros Kariotoglou, Olga Imellou & Aris Charoupias, Paola Nicolini, Valentina Corinaldi, Monica De Chiro, Christina Formiconi & Elisa Attili, Maria Papadopoulou & George Bagakis, Maria-Eleni Sachou & Konstantinos Chatzidimou, Despina Tsakiris, Sophia Smyrni, Dimitra Pavlina Nikita, Christina Tsaliki, George Malandrakis & Petros Kariotoglou, Anastasia Voutyra & Sofia Smyrni

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# **CONTENTS**

<b>Preface.....</b>	<b>8</b>
---------------------	----------

## **1. Action Research**

1.1. Theologia Avdelli, <i>Developing a professional learning community in a Greek primary school: Identifying the obstacles (action research study)</i> .....	12
1.2. Marianna Lepida & Katerina Veniopoulou, <i>Action research as an alternative teacher professional development approach</i> .....	19
1.3. Sonia Likomitrou & Sofia Avgitidou, <i>Teacher support for a dialogical education: Processes and outcomes</i> .....	26

## **2. Classroom Management and Leadership**

2.1. Apostolia Beka & Stathis Xafakos, <i>Personality &amp; resilience characteristics of kindergarten principals</i> .....	33
2.2. Ioannis Dimakos & Athanasia Apostolopoulou, <i>Middle school principals' perceptions of school violence</i> .....	42
2.3. Ertug Can & Hüseyin Çaglar, <i>Examination of school principals' mobbing practices against class teachers</i> .....	50
2.4. Anastasios Maratos & Aggeliki Lazaridou, <i>Building trust in schools: the phantom quality for successful school leadership</i> .....	57
2.5. Olga Mpatsoula, Glykeria Reppa & Anastasia Intzevidou, <i>The role of Headteachers in managing conflicts at Kindergarten</i> .....	63
2.6. Türkay Nuri TOK & Şükran Tok, <i>Novice teachers' classroom management self efficacy beliefs</i> .....	71

## **3. Curriculum and Teaching Approaches**

3.1. Rosy Angelaki, <i>The historical novel: Towards an alternative approach of history teaching</i> .....	80
3.2. Christine Bourlaki & Domna-Mika Kakana, <i>Teacher improvement through the design, implementation and evaluation of a flipped classroom</i> .....	86
3.3. Despina Desli & Elisavet Galanopoulou, <i>Questioning in primary school mathematics: An analysis of questions teachers ask in mathematics lessons</i> ....	97
3.4. Gerasimos K. Pagiatakis & Nikolaos F. Voudoukis, <i>A teaching approach regarding presentation of amplifiers to future electronic engineering educators</i> .....	106

3.5. Lampros Papadimas, <i>Teachers' pedagogical competence in primary school. Examining the classroom climate of schools using the comprehensive reformed curriculum</i> .....	112
---	-----

## **4. Early Childhood Education**

- 4.1. Sofia Avgitidou, Penelope Papadopoulou & Petros Kariotoglou, *Supporting early childhood teachers in Science Education: processes and outcomes*.....120
- 4.2. Efthymia Gourgiotou, *Trainee teachers' collaborative and reflective practicum in kindergarten classrooms in Greece: A case study approach*.....128
- 4.3. Marina Sounoglou & Aikaterini Michalopoulou, *The teacher's role in the digital citizenship formation in kindergarten*.....135

## **5. Information Communication Technologies**

- 5.1. Nikoletta Avgerinou, Maria Giakoumi, Aikaterini Kyriakoreizi & Helen Drenoyianni, *Surveying Greek student teachers' Information and Communication Technology (ICT) skills and their perceptions of ICT in education*.....141
- 5.2. Maria Gkountouma & Maria Kouklatzidou, *Distance teacher training in ICT: A case in Pilot Experimental Schools in Greece*.....149
- 5.3. Anastasia Fakidou & Maria Gotzia, *WebQuests as a training technique of in-service teachers*.....157
- 5.4. Konstantina Kotsari, *Supporting teachers' professional development in classroom use of ICT via distance learning adaptability*.....164
- 5.5. Spyros Kourias, Anna Chronaki & Elias Houstis, *It works but how? The importance of educational robotics as a precursor of Computational Thinking in early childhood education*.....169
- 5.6. Aikaterini Mastrokoukou & Emmanuel Fokides, *Development and evaluation of a 3D virtual environment for teaching solar system's concepts*..176
- 5.7. Nikolaos F. Voudoukis & Gerasimos K. Pagiatakis, *Students' misconceptions in telecommunications*.....185

## **6. Inservice Teacher Education**

6.1. Katerina Boutsi & Theodora Tsagani, <i>Mentoring and coaching : The example of the Aianteio Primary School and its participation in The Network of School Innovation (N.S.I.) 2008-2011</i> .....	197
6.2. Georgios S. Gorozidis & Athanasios G. Papaioannou, <i>The importance of teachers' mastery goal orientation and autonomous motivations for their professional development and educational innovation</i> .....	205
6.3. Vassilis Pantazis, Efpraxia Triantafyllou & Georgia Pantazi, <i>Teacher education on Human Rights</i> .....	214
6.4. Ilknur Savaskan, <i>Teacher influence on promoting and impeding learner autonomy in young learners</i> .....	221
6.5. Spyridon-Georgios Soulis, Eirini Maleskou, Ismini-Charikleia Karatzeni & Vasileios Masouras, <i>Biopedagogism: A new model of training for special education teachers</i> .....	226
6.6. Despoina Styla & Aikaterini Michalopoulou, <i>In-service teacher continuing training in Greece: An overview of institutional training</i> .....	233
6.7. Nikolaos Yfantopoulos, Antigoni-Alba Papakonstantinou & Anastasios Emvalotis, <i>In-service education on ICT: Characteristics, goals and ambitions of participating teachers</i> .....	238
6.8. Efstathios Xafakos & Jasmin-Olga Sarafidou, <i>Greek Elementary school teachers' attitudes towards educational research in relation to research experience and knowledge</i> .....	248

## **7. Language Learning and Teaching**

7.1 George Androulakis, Mariarena Malliarou, Irene Ntasiou, Vicky Panagou, Iro-Maria Pantelouka & Sofia Tsoli, <i>For diversity against adversity: Second language teachers develop intercultural and research skills during an intensive course with immigrants in Greece</i> .....	257
7.2 George Androulakis, Roula Kitsiou, Eleni Paparoidami, Argiro – Maria Skourmalla, Emmanouela Sotiropoulou, <i>A case of training second language teachers online: Affordances, constraints, advantages and achievements</i> .....	265
7.3 Alexia Giannakopoulou, <i>Rethinking teacher education: The case of the EFL primary school teachers Community of Practice in Delta School District of Athens (DACP)</i> .....	270
7.4 George Giotis, <i>Investigating EFL teachers' concerns and beliefs during teaching practice and in their first year of teaching</i> .....	282
7.5 Vasiliki Mitropoulou & Maria Anagnostopoulou, <i>Developing intercultural competences (attitudes, values, knowledge, skills) in the Greek school students with the teaching of Language and Literature courses. A comparative approach of the Curricula 2003</i> .....	288

## **8. Teacher Education Policies**

- |   |     |
|---|-----|
| 8.1. Irini Dermitzaki & Maria Kriekouki, <i>Implementing a teacher education program on fostering students' self-regulated learning</i> .....           | 302 |
| 8.2. Erhan Dönmez & Türkay Nuri Tok, <i>An academic review on life and organization</i> .....   | 310 |
| 8.3. Vasiliki Karavakou & Genovefa Papadima, <i>Why do adult educators need to know their personal educational philosophy?</i> .....                    | 320 |
| 8.4. Panagiotis J. Stamatis & Athanasios Papanikolaou, <i>Environmental influences on communication of Greek family: A comparative case study</i> ..... | 327 |

## **9. Pre-service Teacher Education**

- |  |     |
|--|-----|
| 9.1. Ioanna Georgiadou & Anastasia Vlachou, <i>Students' with disabilities perspectives of service quality in special vocational training: A critical review of the student-as-a-consumer paradigm</i> .....   | 335 |
| 9.2. Domna – Mika Kakana, Katiphenia Chatzopoulou, Magda Vitsou, Eleni Xiradaki & Anastasia Mavidou, <i>E-mentoring: Experimental application of a modern model of support to students in the preparation, design and implementation of practical training</i> ..... | 341 |
| 9.3. Michael Kamoudis, <i>Teacher educators, student teachers and quality in Teacher Education</i> .....   | 353 |
| 9.4. Eleni Mavroeidi & Charalambos Lemonidis, <i>Elementary teachers' attitudes and perceptions regarding the teaching of fractional numbers</i> .....   | 360 |
| 9.5. Anastasia Psalti , <i>Professional identity in Early Childhood Care and Education in Greece: Perspectives of student teachers</i> .....   | 365 |
| 9.6. Natassa Raikou, Maria Kampeza, Thanassis Karalis, <i>Encouraging pre-service teachers to reflect on their teaching during practicum</i> .....   | 372 |

## **10. Teacher's Professional Development**

- |   |     |
|---|-----|
| 10.1. George Bagakis, <i>The contemporary landscape of Greek teachers' professional development. Issues of policies, methodology, practices and perspective</i> .....   | 382 |
| 10.2. Kafenia Botsoglou & Eleftheria Beazidou, <i>Experiencing mentorship, as a field for professional development in Early Childhood Education</i> .....   | 387 |
| 10.3. Bahar Çağrı San & Türkay Nuri Tok, <i>Teachers' organizational commitment and work engagement levels</i> .....  | 394 |
| 10.4. Maria Chaitidou, Anna Spyrtou & Petros Kariotoglou, <i>Developing Pedagogical Content Knowledge (PCK) in primary teachers: The introduction of an explicit PCK course</i> .....                                     | 403 |
| 10.5. Olga Imellou & Aris Charoupias, <i>Professional standards for teachers in a Universal Design for Learning framework. Promoting a data literate and reflective teacher culture in Greek elementary schools</i> ..... | 412 |

10.6. Paola Nicolini, Valentina Corinaldi, Monica De Chiro, Christina Formiconi & Elisa Attili, <i>Soft skills identification for guidance and job placement</i> .....	419
10.7. Maria Papadopoulou & George Bagakis, <i>Teachers' professional development in Greece: An open and flexible learning environment or a confined and rigid education system?</i> .....	426
10.8. Maria-Eleni Sachou & Konstantinos Chatzidimou, <i>Teachers' professional development contributing to a qualitative education.</i> .....	433
10.9. Despina Tsakiris, Sophia Smyrni, Dimitra Pavlina Nikita, <i>Teacher training and the case of International Baccalaureate Organisation: The emergence of a new teachers' professional identity in light of new modes of global governance in education.</i> .....	437
10.10. Christina Tsaliki, George Malandrakis & Petros Kariotoglou, <i>Primary teachers' professional development in instructional design: blending formal and non-formal settings</i> .....	444
10.11. Anastasia Voutyra & Sofia Smyrni, <i>Spreading the virus of active learning: Widespread exploitation of the experience of learning mobility of teachers participating in the Erasmus + KA1 program</i> .....	451

## Preface

The amelioration of teacher education (for candidates and practicing teachers) is closely related to the improvement of the quality and the effectiveness of the education in general. The demand for quality improvement in teacher education and training has nowadays become even more important, as it constitutes a significant challenge for the teachers in order to respond in a highly dynamic and constantly changing field. The changes occurring in the economic, political and social fields have a direct impact on teachers' personal and professional development and, thus, affect their professional identity. Practicing teachers often try to cope with the new conditions, as they attempt to manage a pristine and staggering framework of changes instead of acting as professionals with professional identity, knowledge and skills.

The reflection on the appropriate model of teacher education that would enable them to respond adequately to new roles and responsibilities and face all the challenges and changes in their work is a continuous race both nationally and internationally. Several guidelines and directions have been developed in teacher education. These guidelines reflect the social, political, cultural and economic conditions that prevail at given times and the various advancements in the humanities and the social and technological sciences. Within this complex context, teachers are often asked to restructure their professional practices towards society and educational institutions, following formal and informal methods (Zeichner, 2005).

Teachers' effectiveness has been investigated systematically in recent years. In many parts of the world, the desire to ensure 'quality' teachers' preparation has put emphasis on teacher preparation and professional development as well as the policies that measure their effectiveness (Korthagen, 2004). The principal goal is teachers' constantly adaptive expertise consisting of efficiency and innovation. In particular, on the one hand, the expert teacher effectively accomplishes his/her tasks utilizing his/her knowledge and activating the most appropriate practices during teaching (reflection-in-action) and, on the other hand, reflects and redefines his/her action after teaching (reflection-on-action), which is a reflection process leading to improvement (Boud, Keogh, & Walker, 2002; Hammersness et al., 2005; Schön, 1990). Therefore, to secure teachers' expertise emphasis should be put on their multiple skills and ability to analyze and reflect on the effect of teaching and learning, especially on their own pedagogical and didactic actions (Feiman- Nemser, 2001; Schön, 1990; Zeichner & Liston, 1996). Reinforcing their capacity of critical reflection on institutions and processes and aiding the acquisition of research skills to help them understand the educational process and develop their thinking seem to be the only solution in order to help future teachers and teachers in service cope with the problems and requirements of the modern social, political, economic, cultural and educational reality. These are the basic skills to effectively support teachers' continuous improvement and change throughout their careers.

Based on all the above, the 3<sup>rd</sup> International Symposium (ISNITE2015) – New Issues on Teacher Education, which was held in Volos, Greece, from 11<sup>th</sup> to 13<sup>th</sup> of September, 2015, intended to contribute to the dialogue, which is strongly growing on an international level, for the improvement of initial and continuous teacher education presenting studies on professionalism, professional identity, professional development as well as dimensions that compose teachers' professional status and define their professional existence.

The main goal of ISNITE 2015 was to encourage interaction among researchers, practitioners and teacher educators. We aimed to create a warm environment where

participants would share both theoretical and practical perspectives in the field of teacher education. So, 345 researchers, academics, PhD students, post-graduate students, and educators from different parts of the world attended and presented 181 research papers. More specifically, 65 studies came from neighboring Turkey with whom we co-organized ISNITE 2015 and 103 from Greece and Cyprus. At the same time, we had participants from other countries; particularly, three research papers from Italy, Macerata, where ISNITE 2014 was held, three from Uganda, two from Pakistan, two from USA, one from Holland and one from Israel.

I would also like to thank the invited speakers for their participation in the ISNITE 2015. It was a great honor to share their knowledge and experience with us! In particular, I would like to thank:

(1) **Prof. Kenneth Zeichner**, from Seattle, who participated via teleconference and discussed “*The uncertain future of teaching and teacher education in OECD countries*”,

(2) **Prof Mary Koutsolini**, from Cyprus who presented “*Participatory teacher development through action research*”, and

(3) **Prof. Pasi Reinikainen** from Finland who talked about “*Teachers' professional standards for developing education*”

From all the papers (181) presented in the symposium, 59 were included in **this Proceedings Book** entitled “*New Issues on Teacher Education*” and consisted of 10 sections / chapters:

1. Action research
2. Classroom Management and Leadership
3. Curriculum and Teaching Approaches
4. Early Childhood Education
5. Information Communication Technologies
6. Inservice Teacher Education
7. Language Learning and Teaching
8. Teacher Education Policies
9. Pre-service Teacher Education
10. Teacher's Professional Development

The symposium, which was organized by the Department of Early Childhood Education, the Department of Primary Education and the Laboratory of Theoretical and Applied Pedagogy of the University of Thessaly, was also supported by the “**Journal of Teacher Education and Educators**”. I'd like to express my gratitude to **Prof. Feyyat Gökçe** who is the editor of JTEE, and has greatly contributed to the organization of the symposium.

We hope that ISNITE 2015 provided participants with an excellent opportunity to keep up with the latest developments in teacher education and collectively create a foundation for future studies in this field.

On behalf of the Organizing Committee, whose I had the honor to be the President, I would like to thank all the participants for taking part in the 3rd International Symposium, “*New Issues on Teacher Education*” (ISNITE 2015). All the participants' attendance demonstrated the vivid interest in subjects related to the improvement of teacher education (candidates, practicing teachers and teacher educators) and to the improvement of the quality and effectiveness of education generally. Teachers' effectiveness has recently gained researchers' systematic interest. The general purpose is teachers' continuously adaptive expertise through effectiveness and innovation. The

“expert” teacher effectively fulfills the tasks using his/her cognitive skills and the appropriate strategies in each case. He/she also overcomes well established practices, evaluates and constantly reframes his/her actions; he/she is always in a reflective process regarding his/her work aiming to its improvement. In order to reach the “expert” teacher, there is a need to cultivate his/her ability to analyze and reflect on the process of teaching and learning and more importantly on his/her pedagogical and didactical actions.

Moreover, I would like to thank the sponsors that financially supported the Symposium and the University Press of the University of Thessaly that undertook the publication of the Symposium Proceedings.

What is more, I would like to express my gratitude to Dr Polyxeni Manoli, who edited all the papers of the proceedings book.

Finally, I must thank from the bottom of my heart my co-workers and friends, who supported me selflessly and effectively: Katiphenia (**Fenia**) Chatzopoulou, Fotini (**Fay**) Garagouni-Areou, Papaskevi (**Evi**) Kavalari, Polyxeni (**Peggy**) Manoli, Anastasia (**Natassa**) Mavidou, **Christina** Roussi-Vergou and Sevasti (**Sissy**) Theodosiou.

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## ***1. Action Research***

## **1.1. Developing a professional learning community in a Greek primary school: Identifying the obstacles (action research study)**

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### **Abstract**

*The main purpose of this action research is to identify the obstacles that set barriers to the development of a professional learning community in a Greek primary school. Observation of everyday school life, informal discussions with colleagues and parents and research on governmental and teachers' union documents were used to detect the obstacles in a three- year study. Conclusions that have been reached underline external and internal factors that prevent the development of a professional learning community. Future quantitative and qualitative research is needed in order to investigate the lack of collaborative learning in depth in Greek primary schools.*

**Key-words:** Professional learning community, collaborative learning, professional development, Greek primary school, Greek educational system, action research

### **1. Theoretical framework**

Continual teachers' professional development has been emphasized as an essential factor in every effective educational system of the 21<sup>st</sup> century (Coolahan, 2002; Eurydice, 2008). In our modern societies, Professional Learning Communities (P.L.C.) are considered to be an efficient tool for continual professional development. In these communities, teachers systematically and continuously collaborate in order to learn from each other, critically examine their practices, explore new teaching strategies and, finally, improve their professional effectiveness for the benefit of all pupils and not only the kids of their classes (Darling-Hammond & Richardson, 2009; Giles & Hargreaves, 2006; Harris & Jones, 2010; Hord, 2009; Yildirim, 2008).

Researchers stress that the development of a P.L.C demands efforts not only from the educational personnel but also from the school's leader. A head teacher, in particular, is expected to establish a kind of culture based on trust and collaboration and provide all the necessary educational resources and organizational structure that support teachers' collaborative learning and help all members of the school community to focus on new knowledge and academic development (Fullan, 2001; Gray, Kruse, & Tarter, 2015; Harris & Jones, 2010; Hord & Sommers, 2008; Morrissey, 2000).

Schools where P.L.C. flourish are transformed into a learning organization. Educators are encouraged to discuss their teaching and learning methods collaboratively and solve problems that concern their educational community. In this way, they apply the new knowledge to everyday practice and review its results (Hord, 2009; Imants, 2002). Consequently, positive outcomes emerge not only for teachers' professional development but also for students' progress and schools' improvement and effectiveness (Vescio, Ross, & Adams, 2008).

Though it seems that P.L.C. have positive outcomes to pupils, teachers and schools, they do not develop easily within Greek and other educational systems (Avdelli, 2012; Kennedy, 2011). In the Greek educational system, particularly, researchers underline

that primary teachers usually collaborate on school procedural or administrative matters (e.g., organizing school trips, dealing with operational matters, such as the person who is replacing an absent teacher etc.) and not on teaching and learning issues (Katsaros, 2008; Mlekanis, 2005). Furthermore, when collaborative learning occurs in some cases, this does not happen in a continuous and systematic manner (Avdelli, 2012).

Considering all the above as a newly appointed head-teacher in a primary school, the development of a P.L.C. was one of my main objectives in order to lead and manage an effective educational organization.

## **2. The present study**

This action research was conducted between the years 2012-2015 in an urban public primary school at the region of Attica. The school, which was rebuilt in the 90's, has been providing its services for almost a century in the particular area and has had a good reputation for its educational activities in the local community. It hosts about 150 pupils between six and twelve years old. Its staff consists of eighteen teachers. More than half of them are permanent civil servants, eight specialized in general education, one in special needs education and one in teaching foreign languages; they have over ten years of teaching experience and have been working in this school for more than five years. The remaining educators complement their teaching hours in the particular school and schools nearby and are specialized in music, art, foreign languages, and physical education. The school climate is generally good with decent relationships among teachers, pupils and parents. Collaboration among teachers was limited on organizing school celebrations, organizing school trips and sharing information about pupils.

Having no prior knowledge of the specific school the first year of the study was focused on understanding its climate and culture, building relationships of trust and respect with all the members of the school community and communicating/ explaining the idea of developing a P.L.C. During the second year an institutionalized program of school's self-evaluation was introduced by the Ministry of Education. This program created opportunities of evolving a P.L.C., since it requested from teachers to collaborate in small groups and plenary sessions, formally and informally discuss issues concerning educational procedures, identify problems and, finally, review and improve their practices. Attempts to apply the program failed, as the educational staff, with the endorsement of teachers' union, denied collaborating and joining in, because they did not trust the governmental intentions for schools' evaluation. At the beginning of the third year of the study, we started informal discussions about the school's educational methods and procedures. During these conversations issues were identified that needed to be improved and efforts to form a learning community were made. Its aims were: a) to enhance teaching strategies in terms of solving math problems as well as classroom management strategies for children with behavioral problems and b) to set up a protocol for health and safety in school premises and educational trips.

Only the permanent teachers participated in this collaborative learning process, as the non-permanent teachers could not join the meetings due to their working conditions. The collaboration procedures took place: a) during the first week of the school year, which normally is the time for school to be prepared and organized in order to welcome its students, b) at the end of school's celebration days, where school operate only one or two hours with pupils and c) during three evenings. Meetings were well organized with a specific agenda known to all, so that everybody was to be prepared and nobody

was to feel that these were a waste of time. During meetings the educational staff tried to learn, review, and improve teaching practices by:

- Introducing and discussing personal teaching and other educational practices and highlighting the most effective of them.
- Creating reference folders with good practices.
- Inviting a specialized scientist in mathematics and discuss concerns and questions about teaching problem solving with him.
- Participating in a training seminar about managing behavioral problems in classroom, discussing the new knowledge and collaboratively deciding how this can be adapted to the school's needs.
- Indexing through collaboration all the health and safety issues concerning the school's environment, discussing and recording the best practices and creating a protocol which was distributed to all.

After these actions progress was made in collaborative learning, though this did not function in a consistent and systematic manner.

In the next section, the results of the study concerning the obstacles that set barriers on the systematic development of P.L.C. will be described. These results are based on data that were collected through observation of everyday school life, informal discussions with colleagues and parents, and research on acts, circulars, and teachers' union documents.

### **3. Results**

During the study it was obvious that external and internal factors influenced the creation of a P.L.C. and hindered the development of collaborative learning. These obstacles are presented below.

#### ***3.1. External obstacles***

The first external obstacle is linked with the institutional framework of the public school's operation which is established mainly by the Act 1566, 1985 and Presidential Decree (P.D.) 201, 1998. According to them, teachers must be at school 6 hours per day from 8 am to 2 pm. During this period of time the head teacher with the agreement of the school teachers' association can assign them specific extra duties, such as keeping administration books, organizing the school library, organizing a school celebration, calling parents' meetings, organizing the school lab etc. (Act 1566,1985 art.13). If teachers do not have any extra duties or have accomplished them, they can leave the school before two o'clock upon completion of their responsibilities (Tsipra, 2015). Furthermore, teachers' professional development is planned, organized and developed by certified training bodies or people, such as school counselors, the institute of educational policy and top level educational authorities in specific periods of every school year (P.D.201, 1998 art.14 & Ministerial Decision (M.D.) F.353.1/324/105657/D1, 2002 art.36, 39). As we realize, no time has been allocated for teachers' collaborative learning during school days and no reference has been made to the validity of the P.L.C. in the above rules and regulations. Moreover, they do not set collaborative learning as an extra duty for teachers and do not mention it as a form of professional development. Consequently, the involvement in a P.L.C. is not considered by teachers to be an additional duty which they have to accomplish or a valid form of professional development. This discourages them from participating, since they are not obliged to do so; after all, no central authority will acknowledge their effort, while their participation in such a community means extra unpaid work time for them.

The next obstacle is associated with the duties that a Greek head teacher holds. In M.D. F.353.1/324/105657/D1, 2002, art.27, a head teacher is described as a pedagogical leader, who must introduce and support pedagogical initiatives. However, any innovative proposal from the head teacher must firstly have the agreement of the school teachers' association and, then, if it is not connected to the framework of the rules and regulations, it must also receive approval of educational authorities, such as the school counselor or educational director (M.D. F. 353.1/324/105657/D1, 2002, art.29, 30, 37). In addition, as everything in the Greek educational process is determined by the central educational authorities, head teachers have no power to provide any incentives to teachers, like an increase in salary, a bonus, extra points for promotion etc. in order to motivate, persuade and encourage educators to systematically participate in any initiative that requires from them to spend more time and effort on school, like the participation in a P.L.C.. Thus, there is inconsistency between the rules and the reality (Katsaros, 2008; Saiitis, 2008).

The following external barrier to the development of P.L.C. is related to the hiring of the non-permanent teachers at school. These teachers are never appointed in the school by the central educational authorities at the beginning of every school year. As a result, the weekly timetable has to change many times during school periods after discussions and negotiations with other head teachers in neighboring schools where the non-permanent teachers have to teach. This situation makes it almost impossible to assemble and settle down the school's weekly timetable so that groups of teachers have common non-teaching time for collaborative learning before the end of the school day that is at two o'clock.

Last but not least, another external obstacle is related to the attitudes that teachers of local and national unions hold towards governmental efforts that are trying to transform teachers' professional life. To be more specific, unions declare that there is a hidden agenda behind Ministry's innovations, such as school's self-evaluation program. According to them, the Ministry of Education, through new rules and regulations aim to manipulate teachers, categorize the schools, open schools in the free market economy, lay off teachers etc. (Greek Teachers' Federation, 2013, 2014a, 2014b, 2014c, 2014d). Consequently, trust between the Greek educational community and the Ministry of Education is very low. In such an environment, it is challenging to start working on the systematic collaborative learning in the framework of a P.L.C., since this is an initiative that demands changes to Greek teachers' habits and duties.

Subsequently, the internal factors which impede the development of a P.L.C. are described.

### **3.2. Internal obstacles**

The first internal obstacle is connected with public schools' operational framework which encourages teachers' habits. Greek teachers are not used to working in autonomy, as issues regarding the curriculum, the text books, the teaching contents, the forms of pupils' assessment, and the grouping of children are centrally regulated by the Ministry of Education (M.D. F.353.1/324/105657/D1, 2002, art. 36; European Commission /EACEA /Eurydice, 2013). Under these circumstances, Greek teachers, particularly teachers of the specific school are used to working in isolation, as the only thing they have to do is to plan their lessons following detailed guidelines. Additionally, the only person who can visit a teacher's class and give guidance and advise, if the teacher agrees, is the school counselor (M.D. F.353.1/324/105657/D1, 2002 art.36). This regulation supports the culture of self-sufficient work, thus, many teachers of the specific school do not discuss their teaching methods with their colleagues and many

of them prefer not to discuss issues with the educational counselor trying to find a solution by themselves.

In the light of the aforementioned, we understand once more that there is a lack of trust between the Ministry of Education and the Greek educational staff, as everything is defined and described by rules and regulations giving power to top level educational authorities for decision making and problem solving only. This working framework guides teachers to work alone and believe that their obligations to school ends when their teaching duties finish and discourages them from asking for help from their colleagues and sharing their teaching methods with the third party observer.

The next internal obstacle is set by teachers' personal life and responsibilities. In the particular school, there are teachers that realize the importance of collaboration and collaborative learning and wish to participate in cooperation activities to improve their professional skills and learn from their colleagues. Nevertheless, their personal life sets barriers and doesn't permit them to participate in such activities systematically and continually. So, teachers with young children or old parents to look after or teachers who live far away from school regard collaborative learning as an extra burden which they are not willing to undertake systematically.

Finally, obstacles in the particular school arise from parents' opinion about its educational processes. To be more specific, as the school self-evaluation has not been really applied, the only form of evaluation that exists is parent's comments and beliefs about the service that the school provides to their children. When the members of the parents' association were asked if they were satisfied with the school's operation and if they wanted something to change, they declared that they appreciated the teachers' efforts and did not anticipate changes, as long as teachers continued to give homework, organize school celebration, communicate with them and care about their children's safety. As a result, these positive comments could not act as motivation for changing the teachers' habits.

#### **4. Conclusion**

Building a P.L.C. in the particular public Greek primary school is a challenge that has to overcome both external and internal obstacles so that it can develop in a systematic manner. Lack of trust between top level educational authorities and educational staff, Greek institutional operating framework for primary school, teachers' union policies, teachers' personal life and parents' opinions create barriers to the development of a P.L.C. and establish teachers' habits and attitudes (working in solitude, solving teaching problems on their own, equal teaching hours to job hours, not sharing their teaching methods to their colleagues etc.) that do not allow collaborative learning to grow. Once teachers have the opportunity to realize the benefits of the collaborative learning, they will be willing to participate in such procedures.

The results of this action research could be a starting point for more in depth qualitative and quantitative research in order to attain generalized views of how P.L.C. can be developed in the Greek educational system and which adjustments should occur in our educational system so as to help teachers foster attitudes and habits that support the collaborative learning.

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## **1.2. Action research as an alternative teacher professional development approach**

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### **Abstract**

*This paper refers to action research as an alternative teacher professional development approach. It focuses on the presentation of an example of the conduction of action research by an Austrian teacher concerning English language teaching at a secondary school in Austria. The main idea is to illustrate the way action research can be incorporated and affect teachers' practice. We aim to discuss the relationship between teacher professional development and action research under the light of empirical evidence and underline the importance of action research for teachers' daily practice.*

**Key-words:** Action research, teacher professional development, teachers as action researchers

### **1. Teacher professional development**

During 1980's teacher professionalism arose as an important issue which was directly connected to the improvement of school practice and teachers' role. Emphasis was put on teachers as professionals and their ability to correlate their classroom practice with the social context and the principles of Pedagogy. The basic idea was that teachers as professionals cannot only rely on their teaching competence and their experience, but should examine the socio-economic context, which has a great impact on their practice, and adjust to it (Papanaoum, 2003).

Moreover, the growth of the field of Continuing Education during 1980's underlined the importance of the continuing professional learning throughout their career. Professionals are required to be able to conform to the changing socio-economic conditions which may render their initial education insufficient. So, it is obvious that teacher professional development is not the result of a predictable process but the outcome of the correlation between age, experience, personal characteristics and sociopolitical context (Papanaoum, 2003).

#### **1.1. Teacher professional development models**

According to academics, the prevalent models of teacher professional development are the following: *technical, reflective and critical*. The first model focuses on the basic teaching competencies, so that teachers would avoid didactic faults. In this case, teachers are provided with a safety net but they are totally controlled by the government. Furthermore, there are strict quantitative assessment criteria for them, which focus on the requirements of labor market. Apparently, the technical model is positivistic and requires teachers to implement the curriculum and the educative law without critical reflection (Lionarakis & Fragkaki, 2009; Vougioukas, 2011).

The reflective model implies the importance of reflection for the educational practice and is directly connected to the application of the scientific knowledge and the creative power of teachers (Vougioukas, 2011). More specifically, this model questions the existence of the objective truth, which derives from the scientific research, and promotes the idea that knowledge is socially constructed and highly affected by the social context. Consequently, the reflective model constitutes a subjective approach which focuses on the analysis of authentic educational incidents (Lionarakis & Fragkaki, 2009).

According to the critical professional development model, teachers analyze critically the contradictions and the dilemmas of education, comprehend their causes and find solutions which are in agreement with the sociopolitical context. Moreover, teachers set for discussion certain problems which are related to issues that students as well as teachers have naturalized and are incorporated to the educational establishment (Vougioukas, 2011). So, this model emphasizes the moral and political aspects of education, underlines the educational dilemmas and the alternative teaching choices and leads to the emancipatory action of teachers as a professional group (Lionarakis & Fragkaki, 2009). Apparently, the critical model focuses on action research as a teacher professional development approach and as an alternative solution to the passive role of teachers which is a central characteristic of the traditional models (Vozaitis & Ifanti, 2013).

## **2. Action research**

As we stated previously, the critical professional development model of teachers promotes action research, a term that was introduced by Kurt Lewin (Carr & Kemmis, 1997; Zografou, 2002). Action research emphasizes collaboration and is considered to be a self-critical kind of research, which focuses on solving problems related to the professional practice and aims to find solutions through personal and collective critical reflection (Carr & Kemmis, 1997).

One central characteristic of action research is that it is based on a spiral ordinance and evolves in successive cycles which include certain steps, as depicted in the following figure.

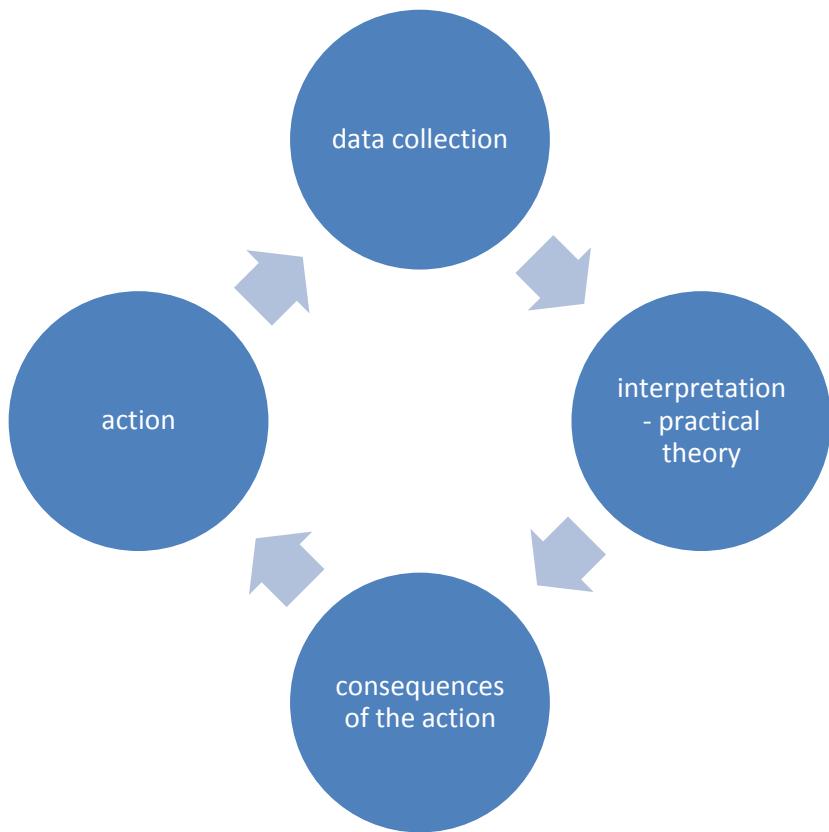


Figure 1: Action research cycle (Altrichter, 2002, p. 40).

The design of the research begins with the initial idea which is later analyzed and further investigated. Teachers process certain issues in depth that bother them and become researchers of their own practice, their beliefs and the circumstances. Consequently, action research can be considered a participatory research of those who work in a classroom. Teachers jointly organize a plan for their actions and implement it gradually. During the implementation of the plan, teachers talk together, analyze their actions and subject them to criticism. This procedure also takes place after the completion of the research, which is followed by its assessment. The assessment may lead to a new cycle of planning and implementing certain actions and be followed by a modification of the research hypotheses which were proposed for the solution of the problems that teachers originally faced (Carr & Kemmis, 1997; Zografou, 2002).

### **2.1. Action research aims**

Action research focuses on two central aims. The first one is the participation of teachers in all its phases and, more specifically, in the planning, the implementation of the research plan, the observation and the reflection. Its second aim is to contribute to the transformation of the practice and the improvement of teachers' understanding of their own practice (Carr & Kemmis, 1997).

We should also mention that action researchers aim to improve the general educational context and that is a reason why they try to analyze the institution of education in depth from a historical and social perspective and act towards its transformation (Carr & Kemmis, 1997).

## **2.2. Action research characteristics**

The basic characteristic of action research is that the research questions are formulated by the teachers and refer to problems and issues they face in their professional practice (such as, problems in their classrooms or with their students). The research questions are not hypotheses that are formulated by academic researchers so that their academic field can evolve. This characteristic highlights the active role of teachers as action researchers, who should reflect on the research questions, analyze them and transform their practice in order to solve the problems they face and improve their professional practice (Altrichter, 2002). This implies a certain epistemological stance on the behalf of teachers, who should realize the importance of a firm theoretical background which will support their actions. Moreover, it implies that teachers should distance themselves from their practice in order to examine it, understand it and interpret it deeper (Zografou, 2002).

Another characteristic of action research is that teachers are required to think about different approaches during the examination of a situation and be open to alternative perspectives which are proposed by their colleagues or the literature they study. More specifically, colleagues' experience is really important, as a central characteristic of action research is to communicate, introduce different ideas and accept teachers' criticism in order to formulate a professional community at school (Altrichter, 2002).

The active role of professional teachers in action research is also related to another fact, which is the control of the research in all its phases (design, implementation and completion) by teachers and not by freelance partners. Professional teachers are in the centre of action research, as the consequences of their actions have a great impact on them and their classroom practice. Thus, we should highlight the importance of teachers' negotiation with their colleagues in order to interpret the findings of the research and clarify the results of the actions that took place during the action research. Teachers' cooperation at this phase is crucial, as teachers' experience is enriched by sharing and announcing their experience to their colleagues, who may work at other schools too. This process has also a political dimension, as it promotes dialogue between teachers at school where they can refer to school problems, their professional practice and the future of the education system in general. Moreover, teachers' dialogue can concentrate on the actions they should take towards the transformation of the social system and change (Altrichter, 2002).

## **3. An example of the conduction of action research**

Herbert Altrichter (2002) published an article concerning the reasons why teachers should implement research on their practice and how they could do that. The article presented an example of a case study which was an action research that took place in the classroom of a teacher named Ines Morocutti. The teacher worked at a secondary school in Austria and taught English as a foreign language. The action research focused on "the oral communication and work at English language teaching in her classroom" (Altrichter, 2002, p. 35).

Firstly, the teacher stated the research questions that were related to her daily practice in her classroom. She discussed those matters with her colleagues, which led her to understand her professional practice deeper as well as the basic assumptions to which the research questions were related. After that, she decided that the central research question would refer to "the presuppositions for the oral communication of her students in English language teaching" (Altrichter, 2002, p. 35). She examined this question in a classroom of 15 students where she taught English as a foreign language.

The investigation of the basic research question required several data collection tools; the teacher used a journal to observe her teaching, created a teaching protocol for 6 weeks and recorded 3 of her lessons in the classroom. The teacher collected important data during this procedure and started to reflect on her daily practice, the way she taught and the students' participation in her classroom. Her basic remark concerned the fact that boys participated more actively in her lessons than girls (Altrichter, 2002).

Subsequently, Ines Morocutti tried to examine her finding about students' participation in her lessons and reflected on how and to what extent she reproduces stereotypes and socially constructed images about gender role during her lessons. In order to investigate these matters, one of her colleagues conducted interviews with 2 boys and 2 girls of her classroom. The students reported no difference in girls' and boys' participation in the lessons. The students' false image about their active role in the lessons was similar to the image that the teacher had formed before the collection of the research data. The new data that were collected during the interviews gave an incentive for further investigation about students' self-image and the roles of gender they think that are acceptable. She was also motivated to start experimenting with different teaching methods and techniques (Altrichter, 2002).

At the end of the action research, Ines Morocutti referred to the importance of the research process that helped her enlighten some central aspects of her teaching and realize that before that she was acting unconsciously and without deep understanding of the importance of her teaching actions. Her reflection about her teaching helped her form and try different teaching conditions in her lessons and give emphasis on increasing the girls' participation in it. Furthermore, she shared the findings of her research with her colleagues and attempted to discuss them together at in-service training programs and an initial teacher training program (Altrichter, 2002).

The example of the conduction of action research that was described above helps us understand the importance of action research as an incentive for teachers to reflect on their daily practice in their classroom and improve their educational role. Furthermore, the example of Ines Morocutti highlights that action research requires communication between the researchers and other people, mainly their colleagues, before, during the conduction of the research and after its completion.

#### **4. Discussion**

At this point, it is essential to discuss some of the basic points of our paper which highlight the importance of teacher professional development nowadays and the importance of action research for the improvement of the institution of education.

First of all, we should remark that different models of teacher professional development have been formed lately, each of which is related to different aims and characteristics and promotes a different approach and image for teachers and their work. We could say that teacher professional development can be represented on a continuum; on the one hand, there is the technical model which puts emphasis on special competences and skills that teachers should acquire, while, on the other hand, there is focus on teachers' reflection about the socio-economic context and its contradictions. The sides of continuum that were described above are related to a different approach and aims in educational policy. In the first case, education is considered to be a merchant that is offered to students-clients and should be improved according to their needs and requirements. This school image was formed during 1990s and is reflected on the choices of European and Greek educational policy. On the contrary, in the second case, the focus is on education as every student's right, while a central idea is that education should not be connected to financial terms of labor market.

Consequently, when there is emphasis on education as a right, the profile of professional teachers is related to their social awareness. In this case, professional teachers should make reasonable choices and organize their work by taking into account their personal principles and their pedagogical aims. Furthermore, teachers should examine the ideological conditions and the social context in which they live and work. As a result, the role of professional teacher in this approach is strictly connected to a participatory form of professional development which is related to action research.

Examining the different forms of in-service teacher training, nowadays, we could say they focus on teachers' special competences and perceive the educational practice as a technical procedure. On the contrary, action research is related to an active role of teachers, who undertake the role of researchers in order to examine their daily practice and find solutions to problems they face in their classrooms. Action research also connects teachers to their colleagues and promotes the formulation of professional communities at school. Consequently, its basic strengths is that action research promotes the active role of teachers, their reflection about their daily practice, the communication and negotiation with their colleagues about school issues and their coordinated action towards educational changes in their school. In this way, action research is a useful tool that promotes teacher professional development, as it requires them to examine and assess their work taking into account their colleagues' ideas as well as their own expectations and assessment criteria (Dakopoulou, 2002).

Another important remark is related to the importance of action research for the connection between daily school practice and scientific research. The two domains are mainly separated and their personnel works in a different way; teachers work at school with their students, while scientific research is usually conducted by academics in the university or by researchers in other research institutions. In the case of action research, the gap between them is reduced, as teachers are the researchers of their daily practice and usually cooperate with academics during the conduction of their research. This form of cooperation between school and university is of highly importance and helps the reconstruction of unequal power relations that exist in other forms of teacher professional development. Academics work with teachers and help them during the conduction of the research by having an advisory role. They provide a firm theoretical background before the conduction of the research and play a crucial role during the interpretation of the data and the explanation of the findings. So, we could say that action research is a learning experience for teachers as well as for academics, as it promotes the understanding of the correlation between science and daily classroom practice (Dakopoulou, 2002).

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## **2.1. Teacher support for a dialogical education: Processes and outcomes**

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### **Abstract**

*This study explores the processes and results of a collaborative action research project, which supported early childhood (EC) teachers to improve or change their dialogic practices during the learning process. Eight practitioners participated in an one year action research project and individual interviews, group meetings, taped recordings of their dialogic practices, self-observations through an observation sheet and children's individual interviews and drawings. Results highlight that the existing EC teachers' dialogic practices connected dialogue more to the acquisition of knowledge rather than to the process of co-construction /negotiation of knowledge. EC teachers' support the change in their beliefs and practices concerning dialogue including enhancement of their reflection through theory awareness and group meetings, their involvement in the process of documentation as teacher-researchers with the use of research tools and their active role in the design and evaluation of dialogic practices. It was argued that the specific professional support through action research and practitioners' dedicated effort and involvement enhanced the processes of change and led to the improvement of dialogic practices.*

**Key-words:** Dialogic practices, action – research, early childhood education, professional learning

### **2. Introduction**

Recent years have seen a strong interest in a qualitative, democratic, participatory and collaborative early childhood education. Current tendencies and discussions related to early childhood education highlight the necessity of strengthening children's active participation through democratic processes. In particular, emphasis is put on the encouragement of participatory and collaborative action, mainly through the adoption of democratic dialogic practices and the creation of dialogic situations that enhance children's voice and collective thinking. In this study, with the term dialogic practices, we mean the way in which teachers use language to create a dialogic situation and guide their students in the co-construction of common knowledge and understanding (Mercer, 2000).

The need to study dialogic practices is linked with modern learning theories (Vygotsky, 1978) and research findings of modern socio –cultural researchers of classroom interaction (Alexander, 2008; Mercer, 2000; Mercer & Littleton, 2007). It is also linked with the tendency for a democratic, participatory and collaborative early childhood education highlighted in European educational policy (OECD, 2001, 2006), international conventions (United Nations Convention on children's rights, 1989: Articles 12, 13 & 29) and educational programs that emphasize the value of children's

active participation in decision making (i.e., Reggio Emilia, «*Philosophy for children*», «*Thinking together approach*»).

Despite this emphasis that supports democratic and participatory educational practices, teachers' dominant educational practices still resist this shift. More specifically, research on dialogic practices with children in classrooms report: (a) a form of verbal interaction based on a pattern, such as teacher's question–student's answer–teacher's feedback in the form of evaluation (Lemke, 1990; Sinclair & Coulthard, 1975), (b) that teachers frequently use closed questions or questions that favor recall of information, focus mainly on children's right answers and enhance little interaction during the learning process), and (c) the dominance of teacher talk during the total time of teaching (talking about facts, giving instructions, making statements or questions aiming to check students' learning) (English, Hargreaves, & Hislam, 2002; Galton, Hargreaves, Comber, Wall, & Pell, 1999). These practices activate low cognitive skills and create interactions based on conventional speech patterns (Gall, 1984; Galton, Simon, & Croll, 1980; Wragg, 1993). In addition, teachers control the flow of discussion (English et al., 2002; Myhill, 2006) and give limited time for children's response to their questions (Rowe, 1987).

It is, therefore, important to support teachers to rethink their dialogic practices and amend them towards a democratic but also socio-cultural model of teaching. In the context of our study, action research (A.R.) described as a model of professional learning was selected because of its participatory, collaborative, democratic and emancipatory orientation. Action research provides a framework and methodology supported by a facilitator, within which teachers try to understand and question their practice and have the responsibility to design and implement practice in close relation to theory, research and reflection. In this way, collaborative A.R. contributes to enhancing a dual role for the teacher both as a reflective professional and researcher, aiming at teacher's self-improvement and professional learning. Therefore, our research aim was twofold: to investigate what may constitute a barrier for the change in teachers' dialogic practices and what may influence /enhance teachers' professional learning and improvement in relation to their dialogic practice.

## **2. Methodology**

This research was an one year collaborative A.R. with eight E.C. teachers working in Greek public kindergartens, with an average work experience of 17 years. They were all informed and voluntarily participated in the A.R. in a common effort to improve their dialogic practices with the support of the team and the facilitator. Teachers were encouraged as researchers based on the need to enhance knowledge and understanding of their children's opinions and practices and utilize this knowledge to rethink their practice. All teachers encouraged the children of their classroom to draw what made them happy or unhappy and then interviewed them regarding their drawing and their opinion about what they wanted to change. Furthermore, all teachers proceeded to self-observations though observation checklists regarding their dialogic practices. This observation sheet was prepared by the facilitator after teachers' initial analysis recordings during structured activities and was discussed and agreed with the teachers. Teachers also recorded their dialogue in the classroom at three different time intervals during the A.R. so that they could listen to it and reflect on it afterwards. In order to enhance reflection, we organized five group meetings to share thoughts and practices and three semi – structured interviews with each teacher during different phases of A.R.

Interviews were analysed by the constant comparative analysis of data throughout the different cycles of action research (Glaser & Strauss, 1967). Transcribed recordings

of dialogue were content analysed in relation to the kind of questions, feedback and different pedagogical practices that teachers used during teaching in the three time intervals. Data were also triangulated to show relations between teachers' knowledge and understanding and teachers' practices.

### **3. Results**

#### ***3.1. EC teachers' initial practices***

Analysis of teachers' initial practices at the beginning of the research, through the taped recordings of structured activities, showed on the one hand that there are particular difficulties in organizing the dialogue with children and on the other hand that the dialogic practices were similar. The main dialogic practices observed were related to closed questions, lack of opportunities for children to explain and justify their opinions, general and unfocused feedback and ignorance of children's wrong answers. Overall, practitioners' role focused on transferring objective knowledge rather than construct-negotiate knowledge among children. Teachers also put emphasis on right responses rather than the development of thinking skills, participation and exchange of ideas. Therefore, the aims of the collaborative action project for the facilitator, focused upon: (a) helping teachers to rethink the meaning of dialogue to promote dialogical practices as democratic, participatory processes and emphasize thinking skills and the process of co-constructing meaning, (b) enriching their strategies to promote dialogue and rethink their low expectations from children's participation in dialogue, (c) considering their actions and not only on children's actions to explain the level of children's participation in dialogue and d) allowing for the process and not only the outcome of dialogue.

#### ***3.2. Barriers to change initial beliefs and practices***

At the beginning of the action research, practitioners reported their difficulties in using the new way to practice dialogue in their classroom. Teachers' resistance to adopt new practices to promote dialogue in their classroom were related to barriers associated with a) their prior knowledge and perceptions and b) psychological factors, such as experiencing stress and fear of a possible failure or evaluation.

More specifically, barriers related to teachers' prior knowledge concerned the practice of old habits as a dominant practice. Teachers strongly supported the view that children did not have the readiness to be involved in dialogue and could not follow rules during dialogue: "*The first thing that comes into my mind is to put children in order*". The need to control speech at the beginning of AR was acknowledged by teachers as well as their difficulty in putting in practice what was discussed as a new dialogic practice because of the discrepancy between existing beliefs and proposed practices. This led to a first disappointment in trying to adopt new practices. Lastly, a need to further support their role as researchers came out as important for their rethinking of their practice.

Regarding the barriers related to psychological factors, we noted teachers' stress due to the use of new research tools and the feeling of a possible evaluation, fear of failure to respond to the new situation, low expectations of themselves and their children, insecurity and the initial disappointment that they felt from trying out something new, leading them to think nostalgically the previous way of working with children and their belief about the difficulty of the task.

### **3.3. Enhancing factors for collaboration in action research**

At the beginning of action research, there were several enhancing factors for collaboration despite these gaps in facilitator's and practitioners' understandings. On the one hand, practitioners understood the value of the proposed meaning and process of dialogue in early childhood education and acknowledged huge differences among their current practices and the proposed way. They were personally motivated to try the new way and convinced that it was a better way to practice dialogue in their classrooms. On the other hand, the facilitator chose specific actions, such as support practitioners in order to learn more about dialogue through in-service teacher education, reflect, know their children through documentation and involve children in participatory, democratic practices.

The factors and processes that reinforced change in practice during the action research were several: i) Affective factors: (a) Positive intention and willingness to try (*i.e. "It seems difficult to do but I will try"*) and (b) Positive attitude towards change as well as openness to learning. ii) Factors of personality): (a) determination to leave their traditional beliefs behind and try new practices, (b) the sense of personal responsibility, (c) personal motivation for self-improvement. iii) Cognitive and collaborative abilities: (a) consciousness that the previous way was wrong in many cases and the new-proposed one is better, (b) teachers' ability to share their beliefs with honesty and openly expose their practice to discussion, (c) ability to reflect on the level of their aims and expectations from children and not only on their practices and (d) efforts to become familiar with new practices. iv) Teachers' initiative and ownership of practice: (a) teachers try out many of the proposed strategies and invent their own to promote children's participation (*i.e. "The Question box", "box of complaints", "The cube of feeling"*), (b) use the documentation processes that guided their future actions. v) Observing outcomes of action: (a) teachers observed the improvement of their practices and children's participation and were impressed by the results, (b) teachers believed that new practices function, because they have seen changes in children's participation in dialogue, (c) they revised their perspective on ways of teaching because they saw an impact on children's learning, (d) they believed that their participation in the A.R. was the most effective way of their professional learning to gain specific and practical ideas that directly affected their daily work in their classrooms. vi) Receiving positive external feedback, such as: (a) children's comments and observations regarding the way they organized dialogue and talked to children, (b) parents' comments observing changes in their children and (c) feedback from the facilitator to enhance the process of change.

### **3.4. EC teachers' transformed practices**

Based on these enhancing factors, we observed changes in EC teachers' practices, especially after the third meeting and also during the last interview. More specifically, we observed that EC teachers changed (a) the type of questions (from closed to open, additional and clarifying), (b) the quality of feedback (from general to more focused / positive), (c) their pedagogical practices that encouraged dialogue (did not ignore or reject ideas, gave children more time to think and respond, sought for alternative ideas, encouraged children to interact in discussions) and (d) the frequent use of open questions to stimulate children's thinking and reflection. Furthermore, they changed the criteria to evaluate the dialogue (now mainly focusing on strengthening children's ideas and construction knowledge), (f) the quality of the dialogue (from cumulative – descriptive dialogue to exploratory / productive dialogue), (g) the meaning of dialogue and participation (providing opportunities for children to be involved assuming a

central role in their learning) and h) the participants' equal role in the learning process (the teacher heard children, explored their meanings in the discussion, the children asked questions and verbally interacted with their classmates and teacher).

### **3.5. The support and differentiated effects on research**

Throughout the course of this research, the role of the facilitator was educational and supportive (i.e. providing access to the theoretical framework of dialogue and action research, preparing the appropriate methodological tools for teachers to collect and interpret data, acquire research skills, document and review their practice). The role was also facilitative (i.e. showing care to develop cooperative relationships among participants) creating contexts for feedback and discussion in group and individual meetings and being supportive (enhancing both commitment and reflection). Nevertheless, the research results were differentiated in terms of teachers' change in their perceptions and practices. The different results are related to a) the readiness of kindergarten teachers to leave behind their previous beliefs about teaching and learning, b) the ability to use documentation practices and reflect upon their practice critically, c) the ability to create interactive situations and lead children's learning through participatory and democratic processes, d) the extent of their initiative and effort for experimentation (active or passive person who proposes or simply applies), e) the nature of the expectations each had of herself (high – low), e) a sense of personal responsibility and consistency (high – low) and f) the distance between the new proposed way and their usual way of working with children.

## **4. Conclusions**

Improvement of teachers' dialogic practices in this research was based mainly on concrete and systematic actions as the enhancement of EC teachers' reflection was based on theory and research, their involvement in the process of documentation with the support of group and individual meetings as well as on teachers' dedication to their effort to improve. All these enhanced the processes of change and led to the improvement of dialogic practices despite the different levels of improvement. In the framework of A.R. teachers accomplished to enhance their professional learning through the active acquisition of new knowledge, skills and experiences within a community of learning, co-construct their new knowledge and effective practices through rethinking old practices and exploring new ones and sharing knowledge, documentation and understandings. Practitioners can change their expectations from children in dialogue, their understanding of dialogue as well as their role and strategies to support dialogue in the classroom if they are supported through reflection, documentation and focused on in-service theoretical grounding of practice, according to their needs, prior beliefs and dominant practices.

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## ***2. Classroom Management and Leadership***

## **2.1. Personality and resilience characteristics of kindergarten principals**

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### **Abstract**

*The present research examines kindergarten principals' personality and resilience, paralleling earlier investigation of primary school principals (Lazaridou & Beka, 2015). We attempt to investigate the personality traits and resilience kindergarten principals display in the current leader position using quantitative methods. To investigate the above concepts we used the «The Big Five Inventory» (John, Donahue, & Kentle, 1991) and the «Leadership Resilience Profile (Revised) Scale» created by Patterson, Goens, and Reed (2013).*

**Key-words:** Resilience, personality, adversity, Big-Five inventory, principals

### **1. Introduction**

Recent years have seen intense activity in the field of social and educational research and continual growth in the number of studies reported in leadership, personality profile and resilient leader profile that are necessary to use in order to succeed in times of change, crisis and turbulence, while the literature is of special interest (Benard, 1991; John & Srivastava, 1999; Luthar, Cicchetti & Becker, 2000; Masten, 1994; Patterson, Goens, & Reed, 2009; Pulley, 1997).

Buss (1996) proposed a revolutionary explanation of the five basic personality traits, Extraversion, Agreeableness, Conscientiousness, Neuroticism and Openness to Experience, suggesting that these features represent the most important qualities that form our social landscape (in John & Srivastava, 1999). According to Costa and McCrae (1997) personality is not just a product, but a mentally tough group of moods inside the person that help the person himself shape the course of his life.

Resilience is a two-dimensional concept and concerns the exposure to adversity and the onset of positive adjustment outcomes (Luthar & Cicchetti, 2000; Masten, 1994). Adversity refers to risky negative life circumstances that are known to be statistically associated with adjustment difficulties.

### **2. Definitions and dimensions of personality**

Several researchers (McCrae & John, 1992; McCrae & Costa, 1999; Simonton, 1995) define personality as fixed patterns of characteristic ways in which a person thinks, feels and behaves, which shows that the concept of personality is associated with all aspects of human behaviour (in Christoforidou & Pasiardis, 2006).

According to the majority of theoretical scientists, human personality consists of five basic dimensions, often referred to as «Big Five» personality traits (Costa & McCrae, 1997 in John & Srivastava, 1999; John, Naumann, & Soto, 2008; McCrae, 2002) which are:

- Extraversion including features, such as sociability, self-expression and confirmation
- Agreeableness, which is associated with characteristics, such as friendliness, cooperation, altruism, understanding, trust, concern
- Conscientiousness associated with features, such as organizing, credibility, dedication and motivation for success
- Neuroticism including features, such as nervousness, selfishness, depression and anxiety, in contrast to low neuroticism associated with features, such as emotional stability, confidence, readiness and satisfaction and
- Openness to Experience, which is associated with features, such as imagination, innovation, courage, desire for new experiences.

### **3. Definitions of resilience**

Based on Masten (1994), resilience is stated in how the effectiveness in environment is maintained or recovered regardless of adversity. According to Pulley (1997), resilience is connected to somebody's ability to quickly overcome the adversity. As Luthar, Cicchetti, and Becker (2000) report, resilience is a dynamic process leading to positive adjustment in adversity.

Resilience is better known as a process and not as a trait of an individual (Masten, 1999; Patterson & Kelleher, 2005). Although it seems that some people have an innate predisposition that contributes to the development of resilience, for example, being extrovert and sociable (Werner & Smith, 2001), most of the traits that are associated with resilience can be a product of the learning process (Higgins, 1994 in Henderson & Milstein, 2008).

Resilience is a person's ability to overcome adversity quickly (Loehr & Schwartz, 2003), disruptive change and failure (Netuveli, Blane, Wiggins, Montgomery, & Hildon, 2008).

### **4. Resilience among school principals**

Patterson et al., (2013) describe three skill groups and eleven strengths/dimensions that successful principals of elementary schools can use to help them become more resilient leaders:

- First group: *Skills of resilient thought*. Resilient leaders show optimistic thinking for the future and the obstacles they may encounter in their career.
- Second group: *Skills of development resilient ability*. Four leading resistances constitute resilience: Personal values, personal strength, personal support base and personal prosperity (Maclean, 2004).
- Third group: *Skills of resilient action*. Four skills of action are necessary to enhance the resilient leader: Perseverance, adaptability, courageous decision making and personal responsibility.

### **5. Research questions**

As a result of literature review and previous research on personality and resilience, the key questions used to guide the research were:

1. What personality profile do Greek kindergarten principals show?
2. Does their personality vary according to age?
3. What resilience profile do Greek kindergarten principals show?
4. Does their resilience vary with age?

## **6. Methodology**

### **6.1. Sample**

The kindergarten principals who participated in this survey were 100; all of them were women representing 100% of the total sample. 61% of the participants belonged to the age group of 40-49 years old, while 18% of the participants belonged to the age group of 50-59 years old. Teachers' demographic profile is presented in detail below in Table 1.

**Table 1**  
*Demographic Characteristics of the Sample*

Demographic characteristics	N=100	
	N	%
Gender		
Men	0	0
Women	100	100
Age		
30-39	21	21
40-49	61	61
50-59	18	18

### **6.2. Research tools**

We used two different scales:

- a) The scale «Leadership Resilience Profile (Revised) Scale LRP-R» created by Patterson, Goens, and Reed (2013), which includes 44 statements with the following factors: Optimism-Future, Optimism-Reality, Personal Values, Personal Efficacy, Support Base, Emotional Well-being, Physical Well-being, Decision-making, Personal Responsibility, Adaptability and Perseverance. The internal consistency was excellent according to the Cronbach coefficient ( $\alpha = .94$ ).
- b) The scale "Big Five Inventory" created by John, Donahue, and Kentle (1991) which includes 44 statements with the following factors: Neuroticism, Conscientiousness, Openness to experience, Agreeableness and Extraversion. The internal consistency was good according to the Cronbach coefficient ( $\alpha = .63$ ).

### **6.3. Data collection procedure**

The survey data were collected through questionnaires given to all principals of the pre-schools of Magnesia, during April and May 2015 and lasted eight weeks. Both questionnaires were designed to "Google.docs" and were given to the principals to answer via the Internet. The time to complete each questionnaire did not exceed 20 minutes.

### **6.4. Data processing**

For the input and the statistical analysis of the survey data the software SPSS Statistics 16.0 for Windows was used. Both methods of descriptive statistics as well as methods of the statistical inference were used for the presentation and the description of the numerical data.

## 7. Results

### 7.1. Personality profile

The results of the study revealed that kindergarten principals showed a high level of Agreeableness and low Neuroticism (Table 2).

Table 2

*Mean Values and Standard Deviation of the Dimensions of Personality*

Variables	N=100	
	M.V.	S.D.
Dimensions of Personality	Openness to experience	4,00 0,50
	Conscientiousness	4,38 0,41
	Agreeableness	4,48 0,44
	Extraversion	3,62 0,52
	Neuroticism	2,14 0,58

### 7.2. Differentiation of the personality profile based on age

Three age groups were created 30-39 years old (21 people), 40-49 years old (61 people) and 50-59 years old (18 people). Personality was found to vary regarding the participants' age (Table 3) only in the dimension related to Conscientiousness.

Table 3. *Differentiation of the Personality Profile Based on Age*

	N	Mean	Std. Deviation	P
Conscientiousness  $F = 4,38$	30-39	21	4,17	0,46
	40-49	61	4,41	0,40
	50-59	18	4,53	0,32

\*p<0,05, \*\*p<0,001

### 7.3. Resilience profile

Kindergarten principals indicate a higher score of Personal Responsibility as a dimension of their resilience and a lower score of Physical well-being (Table 4).

**Table 4**  
*Mean Values and Standard Deviation of the Dimensions of Resilience*

	Variables	N=100	
		M.V.	S.D.
Dimensions of resilience	Optimism/Future	4,22	0,55
	Optimism/Reality	4,30	0,57
	Personal Values	3,87	0,60
	Personal Efficacy	4,11	0,62
	Support base	4,50	0,53
	Emotional well-being	4,05	0,59
	Physical well-being	3,47	0,75
	Decision making	4,09	0,59
	Personal Responsibility	4,54	0,50
	Adaptability	4,44	0,53
	Perseverance	4,00	0,62

#### **7.4. Differentiation of resilience profile based on age**

Resilience was found to vary regarding the participants' age (Table 5) in the dimensions related to Optimism reality, Personal efficacy, Emotional well-being, Decision making and Perseverance.

**Table 5**  
*Differentiation of the Dimensions of Resilience Based on Age*

	Variables	N=100	
		M.V.	S.D.
Dimensions of resilience	Optimism/Future	4,22	0,55
	Optimism/Reality	4,30	0,57
	Personal Values	3,87	0,60
	Personal Efficacy	4,11	0,62
	Support base	4,50	0,53
	Emotional well-being	4,05	0,59
	Physical well-being	3,47	0,75
	Decision making	4,09	0,59
	Personal Responsibility	4,54	0,50
	Adaptability	4,44	0,53

Decision making	4,09	0,59
Personal Responsibility	4,54	0,50
Adaptability	4,44	0,53
Perseverance	4,00	0,62

## 8. Discussion

The teachers participated in the research indicate a high level of Agreeableness as a dimension of their personality, followed by Conscientiousness, Openness to experience and Extraversion, while indicating a low level of Neuroticism.

According to the research findings and the theoretical framework, it is possible to draw the following conclusions: The relationship of Agreeableness with leadership is controversial. Some characteristics of Agreeableness are related to leadership and some not (Bass, 1990 in Judge; Bono, Ilies, & Gerhardt, 2002). Conscientiousness is related to job performance, which means that it is also associated with effective leadership (Barrick & Mount, 1991 in Judge et al., 2002). Openness to experience is strongly linked to creativity, which seems to be an important skill of effective leaders (Judge et al., 2002).

The participants' age was found to be statistically significant only in terms of the Conscientiousness as a dimension of their personality. It was found that Neuroticism, Extraversion and Openness to experience weakened with the passage of age, while Agreeableness and Conscientiousness tended to increase (Costa, Terracciano, & McCrae, 2001).

Principals also exhibited high scores in all dimensions of resilience, but higher scores in Personal responsibility, followed by Support base, Adaptability and Optimism reality, while indicating lower scores in Physical well-being. In the general theoretical framework, it is supported that people with resilience who face adversities show an exemplary, socially acceptable behaviour profile, elements of Responsibility (O'Dougherty-Wright, Masten, Northwood, & Hubbard, 1997). Moreover, Bonanno, Galea, Bucciareli, and Vlahov (2007), who focused on adaptability, it seemed that women had a lower score of resilience than men.

Finally, the principals' age was found to be statistically significant indicating that older principals have more Optimism reality, Personal efficacy, Emotional well-being, Decision making and Perseverance than the younger ones. Results leading us to conclude that older principals compromise with the reality that adversity will appear and seek a positive outlook of it, show their basic skills to lead in turbulent times, understand how their emotions affect their leadership performance and seek time to renew their emotional well-being.

## 9. Conclusion

The findings based on our first investigation of Greek primary-school principals' personality traits and resilience strengths suggested that understandings about school principals developed elsewhere should not be generalized to Greece without considerable caution and restraint (Lazaridou & Beka, 2015).

Having developed resilience we are more capable of seeing any change as an opportunity for learning and growth, no matter how difficult it may be to handle complex changes at the same time, see failures as temporary situations, and have the ability to see beyond the stress to the future.

The process of promoting resilience is becoming a matter of increasing importance for students, teachers and members of school organizations as a result of stressful situations, with which people are confronted in their everyday lives, including the rate of change occurring around the world. This current reality creates a new challenge for teachers and principals to understand every possible effort and respond to the necessity of promoting resilience in the area of the school community.

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## **2.2. Middle school principals' perceptions of school violence**

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### **Abstract**

*The study investigated school administrators' perceptions of bullying, strategies to tackle the problem and achieved goals according to their beliefs. Administrators from several middle schools responded to hypothetical scenarios of bullying. They rated psychological bullying scenarios as the most difficult ones, whereas physical and verbal bullying scenarios were deemed less difficult. Administrators chose a variety of strategies in response to each bullying scenario. Dialogue with the perpetrators and communication with the parents were the most popular strategies. Cooperation with a school psychologist or school advisor and empowerment programs were opted for in more serious cases. Empathy, discipline and call for help were the most popular reasons for selecting the specific strategies.*

**Key-words:** Bullying, principals, strategies

### **1. Introduction**

Bullying is defined as the systematic and frequent exposure to a person's intentional negative actions (Olweus, 1993). The repeatability, feasibility, inequality in power between the people involved and the intent of the perpetrator to the weakening of the victim are the key features to call an incidence bullying. In recent years, more and more studies have focused their interest in bullying as over the years bullying incidents are increasing (Crick, Casas, & Ku, 1999; Crick, Casas, & Mosher, 1997; Dake, 2003; Ma, 2001; Nansel, et al., 2001; Rigby, 2008; Slee, 1994; Whitney & Smith, 1993). Tackling bullying requires knowledge of the causes of the problem in order to provide the proper intervention. One of these lies in the climate of the school unit. The term *school climate* refers to a particular quality of the school associated with the relationship between students, teachers, and parents (NSCC, 2012). When students perceive school as an unfriendly, non-supportive, inequitable and conflict area, violence may occur (Gendron, Williams, & Guerra, 2011). Many times students, in case of bullying incidents, do not choose to go to teachers or administrators because they believe their intervention is ineffective and often tend to worsen the situation rather than remedy it (Charach, Pepler, & Zeigler, 1995; Harris, Petrie, Willoughby, 2002).

#### **1.1. The role of school administrators in bullying**

According to Devos and Bouckenooghe (2009, as reported by Hurley, 2012), the administrator of a school plays a key role in shaping the school climate. When the school climate is not healthy then delinquency thrives. Few studies have focused on how school administrators tackle bullying incidents. In particular, in a study of 700 US

elementary schools, the majority of administrators expressed a preference for communicating with the perpetrator's parents with a view towards updating them in case of a bullying incident. A less preferred option was the organization of a school workshop for parents, children and the entire school community regarding the necessity of interventions in school violence issues (Dake, Price, Telljohann, Funk, 2004). Flynt and Norton (2008) showed that administrators underestimated the importance of school bullying with the vast majority stating that it was a trivial problem and only 10% of them considering it to be quite important. More verbal violence was thought by all to be the main form of abuse suffered by students with disabilities, while a very small percentage said that the most frequent form is psychological violence (Flynt & Norton, 2008).

Another study conducted in Finnish secondary schools showed that administrators tried to examine their students' views on bullying as part of health promotion programs and through events organized once or twice a year to prevent such occurrences (Frojd, Saaristo, & Stahl, 2013). Harris and Hathorn (2006) showed in their survey that administrators regarded spreading false rumors as the most common form of bullying. Also, female directors were more aware of cases of physical bullying than their male counterparts. When asked which strategy they would choose to deal with a bullying situation, the most popular response was the need for education and training of staff. Discussion with the teachers about school violence incidents was a second choice for school administrators, while their third most popular answer was the need for thorough monitoring of students by school staff. Hurley (2012) showed that administrators rated verbal and psychological violence as being more severe than physical violence. To address such cases they used more than one strategy. The majority of administrators tried to gather information about the perpetrator and the victim. Then, all the administrators contacted with the bullies' and victims' parents and often called the school counselor for a more expert approach to dealing with bullying. All administrators agreed on the need for supportive strategies for both the victim and the perpetrator through programs of empathy awareness.

In conclusion, despite the relative few instances of international research on the role of school administrators in bullying situations, the outcomes are similar: dialogue, communication, and empathy awareness training programs. Unlike this international perspective, there is limited, if any, published research concerning the same issue within the Greek educational system. The present study makes such an attempt.

## **2. Method**

### **2.1. Participants**

Twelve (12) principals and vice principals from seven randomly selected secondary schools in the greater Patras metropolitan area participated in the study. Five (5) of them were men and seven of them were women. Their average years of service were 23 (ranging from 10 to 30 years); on average, they were 50 years old (with a range from 38 to 58 years of age). Two of them held Masters' degrees. Furthermore, six of them stated that in the past they had attended some training on conflict management in the school.

### **2.2. Research materials**

Nine hypothetical scenarios related to various bullying situations were developed and used in the study. There were three scenarios per type of bullying: physical, verbal, and psychological. The selection of these three types of bullying was intentional, since they are the most common types of bullying reported in the schools. Each scenario

described a bullying situation of a less powerful (younger, shorter, smaller) student by another more powerful student.

### **2.3. Procedure**

Participants were initially approached and were informed of the study and its requirements. After their consent was secured, they were interviewed individually during school operation hours. Initially, participants rated each bullying scenario as being easy or difficult on a 4-point Likert-type scale. They also answered specific questions about each incident, such as how to address each bullying scenario (strategies to use to resolve the situation) and the reasons for choosing the particular strategies. To ensure the accuracy of the responses, interviews were recorded with the participants' consent.

## **3. Results**

### **3.1. Severity of bullying incidents**

Table 1 presents the distribution of responses on the degree of severity for each bullying scenario. It is important (and reassuring) to note that none of the principals and vice principals rated any bullying event as being very easy to tackle. The majority of them claimed that verbal bullying (including abusive comments and calling names) was easy to deal with. However, they considered verbal bullying difficult only when it involved threats for physical violence.

**Table 1**  
*Principals' Responses on the Severity of Bullying Incidents*

Bullying Scenario	Severity			
	Very easy	Easy	Difficult	Very difficult
Verbal				
Abusive speech	0	11	1	0
Calling names	0	12	0	0
Threats	0	2	8	2
Physical				
Tripping	0	6	6	0
Kicking/punching	0	10	2	0
Stealing	0	2	5	5
Psychological – Social exclusion				
due to clothing	0	4	8	0
due to false rumors	0	3	9	0
due to ironic comments	0	8	4	0

These results paint a rather mixed picture with regards to the view of bullying incidents held by school principals and vice principals. They rated all bullying scenarios as neither easy nor very difficult to respond to with the exception of cases where the perpetrator(s) threatened their victims with physical violence as well.

### **3.2. Strategies for the resolution of bullying**

Table 2 presents the responses of principals and vice principals with regards to the strategies used when dealing with bullying incidents.

**Table 2**  
*Strategies towards Verbal Bullying*

Strategies	Abusive speech	Name calling	Threats for violence
Dialogue with perpetrator	12	5	10
Dialogue with entire classroom	--	3	--
Dialogue with victim	--	--	4
Warning for future punishment	2	--	--
Perpetrator punishment	--	1	5
Co-operation with parents	1	--	7
Co-operation with teaching stuff	--	1	3
Team programs	--	--	2
Work with school psychologist	--	--	2

The most popular strategy of verbal bullying in the school is dialogue with the perpetrator. As can be seen, there is some variety of choices, especially when the bullying incident involves threats for further (physical, in most cases) violence towards the victim. In this case, the choices include more strategies which attempt to educate and inform the entire classroom.

Table 3 presents physical bullying cases and the respective strategies as suggested by principals and vice principals in the present study. The most popular strategy to use was having a conversation with the perpetrator. Another alternative was to inform the perpetrator's parents. Also, it should be noted that these strategies appeared to change, as the bullying scenarios got more serious.

**Table 3**  
*Strategies towards Physical Bullying*

Strategies	Tripping with property damage	Kicks and punches	Stealing personal items
Dialogue with the perpetrator	10	10	--
Dialogue with classroom	1	--	4
Warning for future punishment	1	--	--
Perpetrator punishment	1	1	--
Cooperation with parents	5	4	4
Cooperation with the teaching stuff	--	--	8

Finally, with regards to scenarios of psychological bullying, the chosen strategies principals and vice principals would use are presented in Table 4 which follows. In the present study, psychological bullying refers primarily to social isolation incidents

because the victim does not fit a specific profile (perhaps, their clothes are old or not of a known brand name). It also refers to incidents of spreading false rumors and making ironic comments towards the victim primarily during class time. Respondents choose group activities and programs in order to tackle this form of bullying both at the personal and classroom level. At the personal level, principals and vice principals chose to work with the perpetrator while reaching out to the intended victims only in specific situations. Team programs are opted for in cases when the victim is excluded because of his/her clothing and not as a general strategy for battling the phenomenon.

**Table 4**  
*Strategies towards Psychological Bullying*

Strategies	Isolation due to clothing	Isolation due to false rumors	Isolation due to ironic comments
Dialogue with the perpetrator	7	5	8
Dialogue with all the class	7	--	2
Dialogue with the victim	--	7	--
Warning for sanctions	--	--	3
Perpetrator's punishment	--	1	1
Cooperation with parents	--	3	--
Cooperation with teaching staff	5	1	--
Team programs	8	--	2

### **3.3. Goals of chosen strategies**

The final question to be answered in the present study concerned the goals of the chosen strategies as specified by the respondents in the interviews. The previous tables showed that having a *conversation with the perpetrator* was the most frequent and most popular strategy principals and vice principals used. In their interviews, many of the participants suggested that through this dialogue it may be possible to find the root causes and the perpetrators' motives. Dialogue was also seen as a means to instill some kind of responsibility to the perpetrator. Only few participants suggested that the aim of the dialogue was to impose limits and discipline to the bullying student(s). Similarly, respondents considered that having *dialogue sessions with the entire affected classroom* (i.e., the classroom where the bullying incident took place) was used as a means to influence the majority of the students and explain why bullying was inappropriate and how it affected the entire class. Also, few respondents suggested that *talking with the victim* of the bullying incident helped in boosting the student's morale. The reason for issuing *warnings for future sanctions* (including punishment) was seen by the respondents as a way to establish limits in inappropriate behaviors and instill some form of discipline in the school community. This strategy serves as a notification to the perpetrator that future inappropriate behaviors may not be tolerated by the school administration.

In addition to working with students, administrators also included *working with the students' parents* in their repertoire of strategies. They felt obliged to update parents about the bullying incidents. Some respondents also felt that parents have the power to cultivate discipline and limits to their children at home. *Co-operation with other school staff* is also another method of dealing with bullying situations. Through this co-operation, principals and vice principals thought they could gather more information about the incident and find more effective solutions in order to deal with the problem. Towards this end, the presence of a *school psychologist or counselor* might help them because of their more expert knowledge of bullying. Receiving guidance from such

expert personnel was considered important for having an effective anti-bullying policy in place. Finally, *team programs* which attempt to teach human values, conflict resolution skills and foster empathy to all students were seen as useful in establishing a pro-active school climate that could prevent future bullying incidents.

#### **4. Discussion**

The present study attempted to investigate Greek middle school principals and vice principals' opinions about bullying and their strategies to address the phenomenon in their schools. The evidence through individual interviews suggested that administrators had a specific view of bullying as a school phenomenon and that the strategies they used to deal with bullying incidents ranged. Emphasis was put to talking with the perpetrator and the entire classroom as a way to teach proper behavior. Equally important was the need to inform the families of the involved students and seek co-operation with other school personnel.

The findings of the present study are not exactly consistent with those of earlier studies. Hazler and associates (Hazler et al., 2001) showed that the administrators in their study considered physical bullying more serious than verbal or psychological bullying. Hurley (2012) showed that all forms of bullying had the same impact on the students. On the other hand, Hurley's findings (2012) were partially consistent with the present findings with respect to the strategies to counter bullying. Particularly, Hurley suggested that their respondents chose to converse with all parties involved, while in our Greek sample administrators opted to have a dialogue with the perpetrator.

Despite the use of precautionary steps by administrators (such as, establishing empathy programs and having classroom-wide dialogue sessions), these policies are not as wide and as applied as those established in the Finnish schools (Frojd et al., 2013). Nevertheless, they may be a right first step in the direction of bullying prevention.

In conclusion, this preliminary project attempted to showcase Greek school principals' ways and methods in addressing bullying incidents in their schools. Despite the obvious limitations of the study (small sample size, qualitative methodological approach, lack of generalization), the study offers some evidence about the importance of training and preparing administrators and the entire school community for the severity of bullying, its impact on everyday school life and the importance of addressing and preventing school violence in the future.

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## **2.3. Examination of school principals' mobbing practices against class teachers**

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### **Abstract**

*Mobbing practices at schools have been increasing and affecting education process negatively. This study aimed to examine the school principles' mobbing practices against the primary school class teachers and provide suggestions in order to clear away mobbing behaviours. For this purpose, 25 teachers were interviewed face- to -face with a semi-structured interview form in Üsküdar and Ümraniye, İstanbul. The data were analyzed with qualitative research methods and assesed through the content analysis. The results yielded that the school principles' mobbing practices caused uneasiness, enervation, conflict, stress, distrust against the managers, feelings of unworthiness and decrease in motivation, school devotion and performance among class teachers. It was suggested that providing training to principals and teachers about mobbing, setting up psychological consultation centers at schools, generating related legal and pedagogical arrangements might be helpful.*

**Key-words:** Principles, mobbing, teacher, job satisfaction, psychological violence

### **1. Introduction**

Mobbing is practicing emotional oppression systematically in forms of harassment, threat, suppression and confinement. It includes utilizing power with the intent to hurt someone.

Recently, people are under the pressure of workplace stress, dissatisfaction and exhaustion. With the increased usage of technology, feelings of alienation and isolation, and exposure to managers' and colleagues' offensive attitudes are frequently encountered themes of today's institutions (Karakuş & Çankaya, 2012).

Mobbing is described as emotional abuse or psychological terror. It entails a systematical emotional oppression on employers leading to decreased efficiency and endurance. Decreased endurance finally causes employer quit job. Mobbing can occur in every organisation or institution. Everybody could be subject to mobbing due to their particular qualities. Moreover, a person suffering from mobbing syndrome provides less to the government than what s/he takes. It is an undermined bitter truth that many employers in developing countries suffer mobbing syndrome that can lead to somatoform disorders. For this reason, organisations should raise consciousness about mobbing and take necessary steps to prevent it (Çobanoğlu, 2005).

Several studies referring to mobbing using different terms, such as harassment, scapegoat, intimidation, humiliation, workplace trauma and bullying, agree that mobbing can cause undesirable consequences at workplace (Adams, 1992; Aktaran & Einarsen, 2000; Asforth, 1994; Björkqvist, Osterman ve Hjelt- Bäck, 1994; Brodsky, 1976; Kile, 1990; Leymann, 1990; Matthiesen, Rakness ve Rrökkum, 1989; Thylefors, 1987; Vartia, 1993; Wilson, 1991). Accounting similarities to other organisations,

mobbing can emerge due to increased competition at schools, career struggle and highly increased stress level (Akt. Yıldırım, 2010; Tuncer ve Safran, 2006).

Academicians and researchers have difficulty determining which behaviours can be regarded as mobbing. It is both because of the uncertainty and different levels of employers' vulnerability about mobbing and cultural differences. Thus, it is hard to reach a consensus on who practises mobbing and who suffers from mobbing (Akt. Doğan, 2009; Coyne, 2004). It is important to take the quality of a specific society or organisation into account rather than universal parities in order to describe intimidation and determine the practices that cause intimidation (Gökçe, 2006).

Another problem related to mobbing is that there's a cross-cultural confusion with the term "psychological harassment" referring to bullying behaviours. Academicians frequently use expressions, such as bullying in organisations, organisation or workplace violence, horizontal violence, psychological terror, workplace psychological terror, psychological abuse, workplace syndrome (Baltaş, 2002, p. 54).

The literature suggests that mobbing practices can be encountered in various forms (Doğan, 2009; Tinaz, 2006). These include psychological violence behaviours, aggressive communication attitudes, offensive stand against social relationships, social image, professional status, private status and health condition.

A campaign was launched in 1998 against intimidation acts in the USA. This campaign helped fund-raising for mobbing research, training and prevention. The mobbing research suggested 10 most frequent intimidation acts in organisations (Doğan, 2009). These acts were the following:

- 1) Accounting one responsible for others' mistakes
- 2) Assigning unreasonable tasks
- 3) Criticizing skills
- 4) Expecting someone to follow contradictory rules
- 5) Opinions on the job loss possibility
- 6) Insult and humiliation
- 7) Undermining success level
- 8) Laying off
- 9) Raising voice
- 10) Tarnishing one's honor

## **2. The aim of the present study**

This study aimed to examine why the school principles practise mobbing against the primary school class teachers and what are the consequences as well as the suggestions in order to clear away mobbing behaviours.

The following questions were researched:

- 1) What are the behaviours that the class teachers perceive as mobbing?
- 2) What are the effects of these behaviours on the class teachers?
- 3) What can be done in order to prevent mobbing/intimidation practices against the class teachers?

## **3. Method**

In this study, we used qualitative research method in order to collect more detailed and thorough data, provide more elaborated explanations and grasp the participants' experiences and views better (Büyüköztürk, 2009). The data were analyzed using content analysis. Because this study aimed to examine the school principles' mobbing practices against the class teachers, we used situational analysis among other qualitative research methods. Situational analysis focuses on an integrative examination of the

variables affecting a situation and the mechanisms underlying these effects (Yıldırım ve Şimşek, 2006).

### **3.1. Participants**

The data were collected through face- to- face interviews with class teachers from schools in Üsküdar and Ümraniye, İstanbul. The data collection intervals include 2013-2014 spring season and 2014-2015 autumn season. Twenty-five class teachers (14 female, 11 male) participated in the study. Participants' professional seniority ranged as follows: 11 teachers between 3 and 10 years, 8 teachers between 11 and 19 years, 4 teachers between 20 and two teachers for 31 years.

### **3.2. Development of the data collection materials**

A semi-structured interview form was used by the researcher for the data collection. The interview is a communication process that is in between minimum 2 people. It can be described as a way of information gathering in a study through asking questions about the related topic (Büyüköztürk, 2009).

The interview questions were formed regarding the related literature and professional opinions. The study was first implemented in a pilot group consisted of 4 teachers. Twenty-four interview questions were reduced to 12 after the pilot study and professional advice. Five of the questions in the teacher interview form were designed to gather demographic variables.

### **3.3. Data analysis**

Descriptive analysis and content analysis was used for the data analysis. Descriptive analysis is a cause and effect focused method through which the data are assessed and summarized according to previously formed themes. It makes use of quotations to conspicuously reflect participants' opinion (Yıldırım ve Şimşek, 2006).

Face- to -face interviews were conducted by the researcher. All the questions were asked using the same words and same voice tone. Additional questions were asked, if necessary, in order to be certain about details. The answers were written on a paper to be converted into interview forms later. The data were analysed and interpreted regarding the related literature.

Participants were given numbers to preserve their anonymity. Participants who suffered from mobbing were coded from K1 to K5.

Five themes were determined and the data were interpreted accordingly. The themes and categories were as follows:

1. Mobbing Notion
2. Mobbing Behaviours
3. Effects of Mobbing Behaviours
  - a) Ideological Effect
  - b) Communication Effects
  - c) Social Effects
  - d) Reputation and Prestige Effects
4. Task
5. Professional Productivity

## **4. Results**

Participants expressed the meaning of mobbing as causing depression (N=8), causing stress (N=6), imposing sanction (N=3), status abuse (N=3), sexual or physical

harassment (N=3) and psychological oppression (N=2). Some of the participants' statements were as follows:

"I think it is mobbing when someone abuses his status, imposes sanction and causes depression and stress" (K11). "Mobbing is all kinds of behaviours that includes making someone feel bad and abusing power" (K17).

Participants expressed mobbing behaviours as threatening (N=8), verbal expressions (N=6), ignoring (N=5), being unjust (N=4), assigning hard tasks (N=3), disturbing (N=3), punishment (N=3), mimicry (N=2) and verbal abuse (N=2). "I think it is mobbing when the school principal ignores us, doesn't greet back and expects us to wait near him/herself" (K19). "It is a method of oppression when the school principal acts biased, doesn't give rewards to the ones who deserve, unfairly distributes the curriculum and pretends as if we don't exist" (K3).

More than half of the teachers who participated in the study (N=15) stated that the school principle practices ideological mobbing on them. The statements of some participants were as such: "The school principle attempts to manipulate us to switch our union to his. Also he behaves to us in a different way and does his best to give the rewards to those who share his point of view" (K9). "Conservative school principles tell female teachers *You dress very provocatively, care more*. I have even witnessed some saying *You should change your wardrobe, you aren't befit with our school*" (K12).

The participants stated communication mobbing of the school principles as being prejudiced (N=9), interrupting (N=7), constantly criticizing (N=5), refusing to talk (N=5) and raising voice (N=4). "We have communication problems especially when there is a new school principle. They are prejudiced so we have problem when learn that we have a different political ideology than theirs" (K8). "The school principle used to constrain me from organizing activities. Some of the employers at school was finking on me. I witnessed the principle showing very angry behaviours once. Seeing him yelling at us in front of the parents and students affected me and my colleagues negatively" (K3). "Some principles criticize just to criticize. They sometimes intentionally interrupt us at the meetings and not let us talk" (K23).

According to the participants, the communication mobbing of school principles caused uneasiness (N=10), enervation (N=7), coldness (N=7), distrust (N=7), conflict (N=6), feelings of unworthiness (N=5), distancing (N=4), stress (N=3), lack of motivation (N=2) and decrease in job satisfaction. The participants stated that:

"I try to reason myself because the school principle doesn't respect and appreciate. This causes me to hold a resentment against the management" (K21). Social mobbing behaviors included ignoring (N=7) and excluding from the activities (N=3) according to the participants. Some of the participants' statements are as follows:

"Sometimes I hear about the events after they took place. The school principles pretend as if me and my colleagues don't exist. I wasn't introduced to the teachers when I first started working. I felt outsider and worthless" (K19).

According to the participants, the school principles' social mobbing caused enervation, (N=10), decrease in motivation (N=8), uneasiness (N=7), conflict (N=7), distrust towards the management (N=6) and stress. The participants stated the following behaviours as negatively affecting their reputation: questioning their decisions (N=9), accusing with being angry (N=7), gossiping (N=7), attacking on their beliefs (N=6), looking for a mistake (N=6) and verbal threat. "Some of the principles with higher seniority have been questioning my decisions in a rather humiliating fashion. Also when I see their mistake and tell them about it, they accuse me with being angry and rebellious" (K2). "Especially during the times that I first started working at this

school, I heard that some of the principles that hadn't even known me were making stuff up about me" (K12).

The results yielded that the teachers experienced communication and reputation focused mobbing. Furthermore, the mobbing affected the relationship between the teachers and the principals negatively.

According to the results of the study, task oriented mobbing behaviours of the principles were as follows: Questioning the professional competence (N=9), making one responsible for others' mistakes (N=7), undermining one's level of success (N=7) and dragging one's heels (N=6). "I experienced my professional competency questioned by the school principle. Also, he sometimes behaves as if I am responsible for every mistake as a class teacher" (K13).

The results showed that task oriented mobbing caused uneasiness (N=9), exhaustion (N=8), decrease in motivation (N=8), conflict and enervation (N=7), coldness and decrease in job satisfaction (N=7), distancing (N=5) and stress (N=4) among the teachers. "The school principals behaviours make me feel cold and uneasy" (K14). The teachers indicated that they would be more productive focusing on their proficiency and performing the tasks completely and on time. The consequences of the school principles' mobbing behaviours on the teachers' professional productivity were decrease in productivity (N=8), generalization (N=6), invasion of space (N=4) and looking for a mistake about one's educative actions (N=3). "Even if they are not knowledgeable about the topic, they say: *You can't tell like this, you should tell like this*. Also he monitors the lecture of a teacher whom he doesn't like, he comes to the class abruptly and makes the teacher restless constantly" (K21).

## 5. Discussion

The results of the study yielded that the class teachers were affected negatively by the mobbing practices of the school principles, which caused a decrease in the class teachers' productivity. The class teachers' perceptions of mobbing behaviours did not differ according to the level of seniority, major branch and other demographic variables. Mobbing behaviours were mostly expressed as psychological oppression, threat, stress and conflict.

Can and İşık Can (2013) found in their study that the school principals' unethical behaviours towards teachers were as follows: favouritism, yelling/scolding, abusing status to attract opposite sex, surveillance with camera, behaving biased during task distribution, not greeting, politics/union/religion focused discrimination, psychological oppression, strict control and private demands. The results of this study validated and supported the findings of Can and İşık Can's study (2013). The school principals' negatively assessed verbal, written and implied behaviours as mobbing. Mercan (2007) suggested that the likelihood of exposure to mobbing practices increase when teachers cannot adapt themselves. Özler and Mercan's (2008) study indicated that mobbing practices were caused by negative organisational environment as well as social and cultural factors. According to the results of Cemaloğlu's (2007) study, male teachers encountered more mobbing than female teachers. However, the result was not statistically significant. We can conclude that it is important to allow for sex, school environment and sociocultural factors while examining the relationship between teachers and principals.

The results of this study indicated that mobbing practices affected teachers negatively in areas of communication, social life, professional life and reputation. A number of studies in Turkey indicated that there is a style of management aiming at

employer quitting the job through psychological suppression, deterring and humiliation.

Negative effects of the school principals' mobbing practices on the class teachers were found to be uneasiness, enervation, coldness in relationships, conflict, distancing, excessive stress, distrust in managers, decrease in motivation, exhaustion, decrease in job satisfaction and devotion to school, and feelings of unworthiness.

The related literature suggests that intimidation causes many negative outcomes. According to Yüçetürk's (2005) study, highly costly outcomes were aggression, disease/disorder, low mood, intense stress and decrease in performance and productivity. Also, the teachers' perceptions of exposure to intimidating acts highly correlated with their level of exhaustion.

Taken everything into account, the school principals' mobbing practices against the class teachers were perceived as suppressing, threatening, psychologically harassing causing uneasiness and anxiety. Also, interventions in teachers' beliefs, political stands and professional competency were found to cause unhappiness and other negative consequences on teachers.

Intimidating acts were found to vary from the use of physical environments to the provision and use of equipments.

Can and Işık Can's (2013) suggestions about preventing school principles' unethical behaviours might be helpful to prevent the mobbing practices found in this study. These suggestions were "reassessing the selection and placement system, forming a board of ethics, setting legal regulations to prevent unethical practices, raising consciousness about unethical practices among teachers, principals, personnel, students and parents, and putting emphasis on ethical practices during inspections" (p. 85).

## 6. Suggestions

The results yielded that school principals' mobbing practices against class teachers caused several problems. In order to ease the negative impact of these mobbing practices against school teachers it is necessary to train teachers and principals in the process of selection, placement and designation, to form board of ethic at schools and to formulate legal and pedagogical regulations. In addition, punitive practices such as laying off school principals that practise mobbing might be effective. There is also a need to raise social consciousness about the topic through training parents, students and other social groups. The study findings can be utilized to design projects in cooperation with the Ministry of National Education and universities.

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## **2.4. Building trust in schools: the phantom quality for successful school leadership**

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### **Abstract**

*The present study focuses on the factor of trust within the Greek primary and secondary school context. More specifically, this quantitative study investigates whether the trust factor is present in Greek schools, how it affects the relationships among colleagues and between teachers and their principal and also between teachers and students or their parents. Furthermore, the study investigates how this crucial factor is understood by teachers. Results showed that teachers trust their principal and also that they trust each other. Moreover, the results indicate that parental involvement is still problematic in Greek educational context.*

**Key-words:** Trust, principal, within school relationships, parental involvement

### **1. Introduction**

#### **1.1. Definition**

The concept of trust is a significant concept in Educational Administration. Bryk and Schneider (2002) and Bryk, Bender-Sebring, Allensworth, Luppescu, and Easton (2010) define trust as "a moral resource" capable of creating an unbreakable bond between teachers and superiors. Undoubtedly, teachers are the most important factor and the most important administration "tool" in order to achieve the objectives set by the central administration. For this reason, the development of cooperation and trust among teachers and their administrative superiors is considered to be one of the most important components of success (Fukuyama, 1995).

Research has shown that the existence of trust among teachers and their administrative supervisors, leads, more often than not, to the achievement of the educational goals, while on school organizational level cooperation and creativity are boosted (Hoy & Tschannen-Moran, 2003). The amount of trust with which the management treats teachers and vice versa is the cornerstone creating a favorable, supportive and, in general, positive working environment (Hoy, Hoy, & Kurz, 2008; Davies & Davies, 2013).

Confidence is a positive expectation that others will not act opportunistically either orally or via actions or decisions (Robbins & Judge, 2007). The existence of trust within a school not only affects teachers' behavior but also enhances their morale so as to deal with the achievement of school goals, work more efficiently and achieve overall school improvement (O ' Brien, 2011).

#### **1.2. Organic trust and contractual trust**

For Bryk and Scneider (2002), confidence is directly related to individual obligations. They are two types of trust, the organic trust and the contractual trust. The

organic trust is the unconditional trust among members of a social group, while the concept of a contractual trust is based on a contract style agreement between the parties of a social group. Teachers should frequently stay away from anything that could be a contract disruption. However, Bryk and Schneider (2002) explained that conventional confidence was ineffective in the educational framework, since most schools have multilevel objectives. As a result, most of the time the original contract cannot be left undisturbed. This acknowledgement led the authors to identify a third form of trust, the relational trust, which is related to the specific expectations of every participant in each organization.

### ***1.3. Relational trust***

According to Bryk and Schneider (2003), school environment is characterized by relationship groups with distinct roles. As a result, we have teachers, students and parents who interact among themselves as well as with the director. Each group comprehends its role and obligations but also creates expectations regarding the obligations of the other groups. A school community should first reach an agreement on each team's personal obligations and expectations based on mutual understandings in order to work well.

As individuals interact within the school organization, they constantly try to discern the intentions lurking behind the actions of others. They consider whether the efforts of others have a positive impact on their interests or impinge on their self-esteem. Such thoughts tend to be organized around four key concepts: respect, personal regard, competence in core role responsibilities and personal integrity (Bryk & Schneider, 2003).

Relational trust is a term that entails much more than simply creating a pleasant school environment. A learning organization cannot achieve its goal of relational trust through psychological workshops or retreats. This kind of trust is built day by day through interaction of groups. Trust is created when people who are involved in words and actions meet the expectations that have been created, while, if a successful interaction takes place, it may lead to the success of a more complex action (*ibid*, 2003). Based on the above, it becomes apparent that the study of trust is of utmost significance for a school and, therefore, its study is worth pursuing, as it may be the missing link behind attempts of improvement.

### ***1.4. Focus of the study***

This study is part of a larger one that investigates the presence of trust in Greek schools. The main research question was whether the factor of trust was present at Greek schools and how teachers understood this important concept.

## **2. Method**

In this pilot survey quantitative research methods were used. The final sample was 51 questionnaires. The research tool was the Omnibus T-Scale (Hoy & Tschannen-Moran, 2003) which was translated and adapted to the Greek context for the purpose of this study. The questionnaire Omnibus T-Scale was used to collect the data, which consisted of closed questions in two sections:

- Section A: demographic questions and other data
- Section B: Questions regarding attitudes and opinions concerning confidence in education.

Our research tool had 26 questions focusing on trust among colleagues, on principal and parents. More specifically, Section A consisted of a total of eight closed questions

asking respondents to record information, such as gender, age, seniority, working relationship, specialty, basic education, school district and school unit size. In Section B, there were 26 closed questions, concerning confidence among: a) teachers and their principal, b) teachers c) teachers and parents, and lastly d) teachers and students. In these questions - statements, the respondent is asked to indicate the degree of agreement or disagreement. The assessment of each query is carried out using the 6-point Likert scale, where 1 corresponds to Completely Disagree, 2 in Disagree, 3 in Rather Disagree, 4 in Probably Agree, 5 to Agree and 6 to Completely Agree. Obviously, the average price of all questions is 3,5., while the level of significance is  $\alpha = 0.005$ .

### **2.1. Demographics**

The participants of this survey were teachers of primary and secondary education schools in the broader area of Magnesia, Greece.

**Table 1**  
*Demographics*

	Frequency	Percent
<b>Gender</b>		
Men	23	45%
Women	28	55%
<b>Age</b>		
20-40 y	3	6%
41-60 y	44	84%
<b>Educational Background</b>		
University Education	34	66,7%
College Education	17	33,3%
<b>School units size</b>		
<150	15	29,4%
150-250	16	31,4%
250	20	39,2%
<b>Work experience</b>		
<10	4	7,8%
10-20	40	78,4%
>20	7	13,7%

### **3. Results**

The majority of respondents agree with the extracts evaluated in terms of trust among colleagues as the percentages of the scale of responses indicating agreement in most cases is greater than 75%.

The question with the highest value agreement was: "Teachers in this school trust each other", with a percent of 94.1 % agreement. This passage reveals the state of camaraderie and trust between teachers. The question with the lowest value agreement was: "The director of the school does not show interest in teachers' at 2% and incidence of only 1. This figure shows the trust in school principal and supports the hypothesis of existence of trust at school.

As it emerges, teachers in a percentage of 82.4% stated they trust their school students. 70.7% of the respondents stated they believe that students trust each other. Furthermore, 66.7% agreed that students can be trusted regarding academic work being undertaken.

The considerable disagreement percentage reaching 88.2% presented the passage concerning the possible secretiveness of students, indicating the existence of trust between teachers and students and leading students to be open to teachers. The agreement percentage on whether teachers trust their parents reached 80.3 %. Finally, a large agreement proportion of 78.3% presented the passage concerning teachers' trust towards parents regarding their credibility on the commitments being undertaken.

In this research, concerning the question related to whether teachers believe that most parents do a good job, disagreement arose at a rate of about 51 %. Regarding the question whether teachers can believe whatever parents tell them, the disagreement rate reached 68.6 %. The last two results are in stark contrast to the answers to the previous questions concerning trust in relations between teachers and parents and suggest that parental involvement is literally an unknown term in everyday school organization.

#### **3.1. Subscales**

Furthermore, three subscales were created. The creation of those subscales was based on the format proposed by Hoy and Tschanen-Moran (2003). More specifically, related items were computed and their mean was found. The reliability of the three new subscales is considerably high as seen in Table 2.

**Table 2**  
*Subscales*

	Mean	alpha
Subscale		
Faculty Trust in the Principal	5,21	.735
Faculty Trust in Colleagues	4,72	.906
Faculty Trust in Clients	3,83	.741

Research has shown that there was statistically significant difference concerning the school area. Teachers from rural areas seem to trust more the school principal

(Sig.=.017). That figure can be explained by the fact that in smaller schools it can be easier to develop intimate relationships.

#### **4. Discussion**

According to the literature review, it turns out that having trust in school, leads not only to the improvement of school climate (Bryk & Schneider, 2003), but also to the improvement of academic results and organization (Tschanen-Moran & Hoy, 1998). Teachers of the sample of this study agree that trust is a much appreciated value that should run through the school all the time. When it comes to their principal, there was an overwhelming support from teachers which almost exceeds 90%.

Teachers wholeheartedly support and trust their principal and perceive him/her as one of them, not a superior. Parental involvement is linked to improving the quality of education and children's better performance (Larocque, Kleiman, & Darling, 2011). In Greece, research has shown that family - school cooperation takes the shape of formal relations within specific obligations, such as the involvement of parents in school events or updating them on the progress of their children (Gkliaou - Christodoulou, 2005; Papagiannidou, 2000). The subscale analysis in this study showed that school teachers trust their principal. All questions referring to the school principal in a negative way, presented very small percentages and averages reaching one, indicating that survey respondents consider principal as a person of trust. Teachers also trust each other as colleagues. The participants remained neutral towards students and parents, which enhances the hypothesis that parents and students are considered to be an external part of the school system in Greece. The statistically significant difference concerning the school area that was shown in the analysis indicates that teachers working in rural areas seem to have more confidence in their principal. This is regarded as a consequence of closer ties being developed in the above areas.

#### **5. Suggestions**

While the existence of trust among the teaching staff is something that seems to have solid foundations, it is mandatory that the existence of trust between school organization and the State be studied. Trust should be shielded and reinforced not only by the very same organizations but also by the institutions of education. Parental involvement should be studied and introduced ultimately in school affairs. Parents should seek and claim an enhanced role, while the school organization should be ready to support it. This aforementioned research was a pilot survey of a wider research which will lead to safer conclusions upon its completion.

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## **2.5. The role of Headteachers in managing conflicts at Kindergarten**

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### **Abstract**

*The present research examines the phenomenon of conflict that concerns educators in kindergarten schools. It attempts to explore the factors of provoking in-school conflicts among kindergarten teachers, the positive and negative consequences that may occur due to these conflicts and also the teachers' attitudes towards conflicts. The method used is a quantitative survey with self-report questionnaires. The most important factor of conflict orientation is the "the problems' solution" and there is no differentiation of the causes and effects of the conflicts in terms of kindergarten teachers and headteachers.*

**Key-words:** Conflict, attitudes towards conflict, leadership style, kindergarten teachers, schoolmasters

### **1. Introduction**

Conflict is a basic psychological mechanism. Absence of conflict means throwing off responsibilities, indifference and sloth (Hanson, 1996). The poorly managed conflict lowers productivity and creates additional conflicts (Paraskevopoulos, 2008). The way participants meet on the dynamics of conflict determines whether the results are positive or negative (Hammer, 2005).

According to Everard and Morris (1999), conflict in the school community, whether it is a concept of sincere differences of opinion, which stems from the presence of alternative modes of action, or a genuine conflict of interests or personalities, is not just unavoidable but also a valuable piece of school life. The constructive distinguish of these conflicts is of great importance to achieve educational, administrative and organizational objectives (Balay, 2006). The term "organizational conflicts" refers to organizations, such as educational communities. They are personal conflicts with colleagues or Heads or conflicts between groups in different parts of an organization (Imazai & Ohbuchii, 2002).

Taking into account the fact that there are different types of educational communities (Westheimer, 1998) as well as the liquidity or volatility of the composition of teaching staff, the quick resolution of conflicts is crucial. The role of the Director is important for dealing with conflicts in an educational organization (Saitis, 2008). The Directors or Managers, who wish to deal with conflicts effectively, need to understand the sources of conflict (Rahim, 2002). The possible causes of conflict in a school organization can be found in the following factors, such as the incompatible objectives (Taylor &

Moghaddam, 1994), individual differences, the organizational structure associated with incomplete and unclear definition of tasks of school staff (Mpurantas, 2002), lack of communication, the perceived imbalance in power and finally the external environment (Athanasoula – Reppa, 1999). Regarding its consequences, conflict is a concept that affect the relations of individuals and groups negatively or positively.

In recent years, there have been some research on conflicts in the Greek educational organizations (Paraskevopoulos, 2008; Tekos, 2009; Tsiopa, 2010). In a survey of Mavrikakis (2008), a large majority of teachers and directors have been reported to confront the phenomenon of conflict and its causes because of official or personal reasons. As most studies on the conflict phenomenon in education refer to the role of the primary school director, the present study was an attempt to explore how the kindergarten headmasters manage conflicts and how preschool teachers perceive these conflicts. The administrative duties of the Kindergarten Headmasters are almost the same as the directors' and assistant principals' of primary school. At the same time, their role is double and often contradictory (Theoharidis, 2012). They work on behalf of senior central administration and are active teachers every day - without reducing the working hours due to their position. The role of Kindergarten Headmasters is very important, as they may conflict with themselves to achieve the objectives set and have harmony in school life.

## **2. Aim of the study**

The aim of this study was to explore the management of conflicts referring to the Headmasters in kindergarten and also notice how kindergarten teachers perceived conflicts. In particular, it attempted to explore the factors of provoking in-school conflicts among kindergarten teachers and investigate the positive and negative consequences that may occur because of these conflicts. In addition, the research investigated the contribution of kindergarten teachers and Heads' demographic profile as well as the influence of the leader's attitude towards the orientation of conflicts.

## **3. Methodology**

### ***3.1 The participants***

The referring population of this study was pre-school teachers. A questionnaire was given to kindergarten teachers and their headteachers. 155 pre-school teachers participated in the research. The 50.4% of the respondents were aged 36-45 and 41% were 46-55 old. The majority of the sample (64.7%) was graduates of the Pedagogical Section (4 years studies) and the rest of them had two years studies after attending the equation programme. Regarding their educational experience, 46% had experience of 11-15 years, 78.4% had experience as a Headmaster during the educational service, 34.5% had experience up to 3 years and 28.8% of 4-10 years. During the school year, 35.5% held the position of Headmasters. 30.2% chose further training (2 years training) as additional studies, while only 5% had a MA degree.

### ***3.2 The instrument***

The method used in this study was quantitative; a relatively short questionnaire was used to collect data. The first part consisted of 13 questions that investigated the participants' profile. In the second part, the participants were asked about the causes and the consequences of conflict. To examine the teachers' attitudes towards conflict, the Everard and Morris (1999) model with its five-fold way of coping with conflict was used. This model includes the following attitudes to conflict: 1. Avoiding 2. Fight 3. Smoothing 4. Compromise 5. Solving. As far as the investigation of the leadership style

was concerned, the leadership behavior scale for the school principal was used (Hoy & Clover, 1986). This specific scale distinguishes leadership style in three categories: the supportive, the directive and, finally, the restrictive style of leadership.

### **3.3 Data analysis**

The responses of the completed questionnaires were analyzed with the aid of descriptive and inferential statistics, using the statistical program SPSS 21 (Statistical Package for Social Science). Descriptive position and dispersion measures were used for the purposes of the research in order to provide an insight into conflicts and leadership in early childhood education (the Spearman correlation index ( $r$ ), the non-parametric Mann-Whiney, the non-parametric Kruskal Wallis, the non-parametric Friedman's control). The internal reliability of all scales of conflict orientation and leadership behavior ranged from satisfactory ( $\alpha = 0.769$ ) to high ( $\alpha = 0.897$ ).

## **4. Results**

The data of the responses resulted from the use of appropriate statistical techniques. The analysis and the significance of the respective inspection revealed a statistically significant difference in the axis of «Compromise» ( $p = 0.049 < 0.05$ ). More specifically, it showed that teachers who did not serve as Heads in the past, had a higher value in that axis compared to those who were Heads previously.

Table 1

*Mean and Standard Deviation and Median for the Five Axes of Conflict Orientation*

Conflict Axis	Mean	Standard Deviation	Median
Avoidance	1,854	0,511	1,800
Appeasement	2,789	0,531	2,800
Fight	2,112	0,420	2,200
Compromise	2,792	0,443	2,800
Problem Solving	3,353	0,411	3,400

**Table 2**

*Mean and Median for the Five Axes of Conflict Orientation as to whether They Had Experience as Heads and the Importance of the Mann-Whitney Control*

Conflict Axis	Have you served as Heads of Kindergarten	Mean	Median	P
Avoidance	YES	1,858 (0.53)	1,800	0.960
	NO	1,840 (0.45)	1,800	
Appeasement	YES	2,774 (0.54)	2,800	0.646
	NO	2,840 (0.47)	2,800	
Fight	YES	2,113 (0.41)	2,000	0.324
	NO	2,159 (0.44)	2,200	
Compromise	YES	2,751 (0.45)	2,800	0.049*
	NO	2,938 (0.37)	3,000	
Problem Solving	YES	3,327 (0.42)	3,400	0.178
	NO	3,447(0.38)	3,400	

Regarding the results obtained by variables processing on the three scales of leadership, it was observed that greater value was achieved in the range of the supportive leadership behavior (mean 3.161, medians = 3.222) compared with the scale of the directional leadership behavior (1,623 MT, median = 1.500) and the scale of the restrictive leadership behavior (mean 1.819, medians = 1.750).

**Table 3**

*Mean, Standard Deviation and Median for the Three Scales of Leadership Style*

Leadership Style	Mean	Standard Deviation	Median
Directional	1,623	0,511	1,500
Restrictive	1,819	0,637	1,750
Supportive	3,161	0,617	3,222

Finally, by using the Mann-Whitney control the differentiation of the three scales of leadership behavior was checked regarding the position of teachers of pre-school education.

Table 4

*Mean, Standard Deviation and Median for the Three Scales of Leadership Behavior regarding the Experience they Have as Heads and the Importance of the Mann-Whitney Control*

Leadership Style	Have you served as Heads of Kindergarten	Mean	Median	p
Directional	YES	1,645 (0,55)	1,500	0.562
	NO	1,536 (0,39)	1,500	
Restrictive	YES	1,858 (0,63)	1,750	0.106
	NO	1,683 (0,66)	1,500	
Supportive	YES	3,110 (0,65)	3,222	0.143
	NO	3,333 (0,47)	3,278	

## 5. Discussion

The present research intended to study the orientation of conflicts at school among teachers of preschool education. Regarding the question about the main cause of conflict, most teachers (27.4%) believed that poor communication between teachers is the main cause, followed, without major statistical differences, organizational weaknesses (25.9%) and individual differences (22.2%). In other words, they believed that poor communication is ineffective in an educational institution and reduces cooperation (Athanasoula - Reppa, 1999).

Many times the categories of conflict causes are difficult to separate from each other. A closed communicative climate is created in an organization when there are organizational weaknesses and not clearly defined roles (Mpurantas, 2002). According to the survey, kindergarten teachers did not chose the incompatible objectives, the external environment and inadequate resources as main causes. It was concluded that the preschool teachers knew the economic realities in schools, although they wanted them to be different. Moreover, they did not believe that the limited resources could lead to conflict with their colleagues, as in most kindergartens, kindergarten Heads did not have the financial management.

Regarding the negative impact, the largest percentage (35.3%) of kindergarten teachers mentioned distrust and the negative climate in the organization as a possible negative consequence. Besides, the poor quality of communication, which preschool teachers chose as the main cause of conflicts, leads to the development of negative emotions, such as disbelief, but also to the creation of negative climate (Everard & Morris, 1999). 24.5% of the sample believed that the conflicts created stress and would give less job satisfaction and salary reduction, implying, thus, that there is stress, insecurity and increased levels of work stress in the work place (Pappas, 2006). Meanwhile, 21.6% thought that there was a decrease in productivity and dysfunctions, while 18.7% chose as a negative impact the development of school members' continuous reaction to any initiative or activity.

Regarding the question about the positive results of conflict, the major percentage of kindergarten teachers (64.5%) answered that except for the negative consequences there are also positive elements in conflicts. More than half (53.9%) believed that conflicts exuded problems to the surface and it is a good opportunity to solve them. According to the literature, conflicts treated promptly highlight weaknesses and protect the organization from future difficult situations (Callanan & Perri, 2006). A smaller percentage (28.1%) believed that conflicts strengthen relations if resolved, while 18% claimed that conflicts can lead to new ideas, innovations and better decisions. It turns out that kindergarten teachers whether they had been Heads or not in previous years, had the same views on the causes and consequences of the confrontational phenomenon in the educational organization. The role of Head and kindergarten was not separated, as in most cases the same person performs the same duties.

Concerning the results obtained from the treatment of the variables relating to 5 axes of orientation, the majority chose to resolve the problems, while there was equivalence with respect to the choices of appeasement and compromise. Lower prices on the axes of Avoidance and Fight were observed. This research accorded with the findings of Paraskevopoulos' research (2008), where teachers adopted conflicts problem solving and smoothing problems as attitudes towards each other and the research of Argyriou, Andreadou and Athanasoula - Reppa (2011), where the results showed that teachers chose the technique of solving and compromise. Kindergarten teachers would not bypass conflict delaying the confrontation and leaving the problem itself to be solved. There was a variation in the choice of the axis of compromise. Kindergarten teachers chose compromise as a management attitude contrary to the Heads. They showed their willingness to compromise and recognized the position of leadership in relation to themselves. The findings were contrasted to a survey of Monchak (1994), where Headmasters chose a compromise in relation to the rest of the education staff. Kindergartens are autonomous schools, where the objectives of the training program and the curriculum are common to all teachers. In most kindergartens in Greece, four main preschool teachers work and form a cooperative group. According to Jorge (2001), closeness, intimacy and trust when they coexist in small groups of employees, particularly in teachers, contribute positively to the organizing of pedagogical processes and the combined operation of teachers.

Finally, on choosing leadership, kindergarten teachers and Heads chose the supportive leadership style. According to Zavlanos (2002), they preferred the leadership style that is interested in people, cared for them and accepted their colleagues' dialogue and suggestions. No one chose a Head who exercised close supervision or appointed bureaucratic tasks.

There are some limitations in this study. The study includes teachers of early childhood education working in the Greek public school, while teachers working in private schools are not included. In the field of private education, there is a clear relationship between leadership and subordinate. Future research that would also include teachers of private education would be interesting. A survey could be made, which refers to conflicts between Headmasters of primary schools and kindergarten Supervisors whose schools co-locate.

In conclusion, the main point is not about the degree of the conflict, but how well the conflict management is confronted at school by teachers and school leadership (Athanasoula – Reppa, 1999).

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## **2.6. Novice teachers' classroom management self efficacy beliefs**

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### **Abstract**

*This study aims to determine novice teachers' classroom management self efficacy beliefs as well as the extent to which these beliefs change according to independent variables. This research which aims to determine novice teachers' classroom management self efficacy beliefs is a general survey type research. The participants of the study are 85 novice teachers on duty in their first year in Hatay Province in Turkey. Classroom Management Self-Efficacy Convictions Scale that is internally consistent and valid in measuring classroom management self-efficacy beliefs of prospective teachers devised by Çetin (2013) was used in the study. There is not any statistically significant difference in terms of school of graduation and classroom management efficacy belief and result expectation sub-dimension. There is not any statistically significant difference in classroom management efficacy belief and result expectation sub-dimension. In terms of gender, there is not any statistically significant difference in the result expectation sub-dimension but there is a statistically significant difference in classroom management efficacy belief. Male teachers have higher level of classroom management efficacy beliefs than female teachers.*

**Key-words:** Novice teacher, classroom management, classroom management self efficacy beliefs

### **1. Introduction**

According to Bandura (1997), teacher efficacy (SE) is “the outcomes of cognitive process in which people construct beliefs about their capacity to perform at a given level of competence” (p. 80). It is determined that novice teachers are better at presenting the lesson plans, providing student discussion and classroom management at a study conducted by high efficient novice teachers (Bandura, 1997; Saklofske, Michaylukve, & Randhawa, 1988). It can be said that the teachers believed in teacher efficacy support students to be academic self-managed individuals, their interests and prefer convincing process rather than authoritative controlling (Bandura, 1997). Specific domains of teacher self-efficacy that have received previous research attention include student engagement, instructional strategies, and classroom management (Coplan & Bosacki, 2015; Tschannen-Moran & Hoy, 2001, cited in Bullock). Classroom management is the ways teachers organize and structure their classrooms for the purpose of maximizing student cooperation and engagement and minimizing disruptive behavior (Arends, 1997). Effective classroom management is critical for the establishment of learning environments that promote academic success (Rosas & West, 2010).

A study by Emmer and Hickman (2012) found that classroom management efficacy is separate from other types of teacher efficacy. Thus, a teacher's level of total self-

efficacy may not be a clear reflection of self-efficacy in regards to classroom management and discipline (cited in Hicks, 2012). Self efficacy in classroom management defined as teachers' beliefs in their capabilities to organize and execute the courses of action required to maintain classroom order (Brouwsers & Tomic, 2000). Teachers' self-efficacy in their classroom management capabilities is thought to be an important factor in teachers' overall judgments of their teaching SE. Low SE in classroom management has been linked to teacher attrition and burnout, and reduced student learning outcomes (O'Neill & Stephenson, 2011).

Numerous studies have shown that classroom management is the main problem that novice teachers face. Korkmaz and Saban's study (2004) showed that novice teachers have difficulty in classroom management (preparing students for lesson, motivating, providing discipline in class and effective communication with students). Veenman' study (1984) showed that novice teachers perceive class discipline, motivate students, deal with individual differences and the relations with families as problems.

Williams (1976) found that discipline and pupil control, which are combined to make up a significant component in classroom management, were among the most common problems faced by new teachers (cited in Hicks, 2012). Hicks' (2012) study indicated that classroom management is a large problem for novice teachers who do not feel prepared for their experiences in the classroom. Giallo and Little's study (2003) revealed that teachers feel moderately confident in their abilities as classroom managers. In their study, Shohani, Azizifar and Kamalvand (2014) showed that novice teachers do not believe in their capacity to manage their classes. Yılmaz's study (2004) found that novice teachers have lower levels of self-efficacy for classroom management than personal teaching. Öztürk and Yıldırım (2013) as well as Çakmak (2013) showed that novice teachers have difficulty in classroom management, too.

Analyzing the classroom self efficacy is important for evaluating classroom management in pre-service education process, developing pre-service and in-service programmes that promote novice teachers' self efficacy beliefs towards classroom management depending on the results taken from the study and providing support to novice teachers by school managers, counseling teachers and the other senior teachers in the school. In addition to this, while the studies conducted in literature are related with self efficacy perception, there are limited studies on classroom management self efficacy beliefs.

### ***1.1. The purpose of the present study***

This study aims to determine novice teachers' classroom management self efficacy beliefs as well as the extent to which these beliefs change according to independent variables. More specifically, the following research questions were investigated:

1. What are the novice teachers' classroom management self efficacy beliefs?
2. Do the novice teachers' beliefs differ according to gender, educational background, and field?

### **2. Method**

This research which aims to determine novice teachers' classroom management self efficacy beliefs is a general survey type research. The participants of the study are 85 novice teachers on duty in their first year in Hatay Province in Turkey. 21% of the sample is clasroom teachers, 79% of the sample is subject-matter teacher. 46% of the sample is female and 54% of the sample is male. 93% of sample has a Bachelor degree,while 7% of the sample has a Master degree.

Classroom Management Self-Efficacy Convictions Scale that is internally consistent and valid in measuring classroom management self-efficacy beliefs of prospective teachers devised by Çetin (2013) was used in the study. The scale including 15 items has two sub-scale as classroom management efficacy belief (3, 8, 9, 13, 14, 16, 17, 12) and result expectation (1, 6, 7, 10, 11, 29, 20). Internal coefficient of consistence is .76 and .77 for the sub-scales. The cronbach alpha value for all scale is .81. Since there are 15 items on the scale, the lowest point expected is 15, the highest is 75. Accordingly, the scale is as follows: "Never agree" 1, "Somewhat agree" 2, "Moderate agree" 3, "Much agree" 4, and "Total agree" 5. Highness of the score which can be achieved by the scale indicates high self-sufficiency and a low score indicates low self-sufficiency. Frequency, mean, standard deviation and independent samples t-test were used for the analysis of data.

### **3. Findings and discussion**

#### ***3.1. Findings related to the first sub-problem***

The first question of the study has to do with exploring the novice teachers' classroom management self-efficacy beliefs. Descriptive statistics related to this problem are presented in Table 1.

**Table 1**

*Descriptive Statistics Related to Novice Teachers' Classroom Management Self-efficacy Beliefs*

Sub-dimensions	N	Min.	Max.	$\bar{X}$	Ss	Agreement degree	Agreement level
1.Sub-dimension: Classroom management efficacy belief	85	22	40	32.84	4.67	4.11	Much agree
2. Sub-dimension: Result expectation	85	15	35	27.68	4.02	3.95	Much agree
Total scale	85	37	74	60.52	7.49	4.03	Much agree

While determining Classroom Management Self-Efficacy Convictions, total mean, standard deviation and minimum, medium, maximum scores from scale are taken as criterias.

At the general mean of Classroom Management Self-Efficacy Convictions Scale,  $15 \times 1$  equaling 15 score can be taken as minimum score from scale,  $15 \times 3$  equaling 45 score can be taken as median score from scale and  $15 \times 5$  equaling 75 score can be taken as maximum score from scale. The lowest score taken from the first dimension of scale is  $8 \times 1$  equaling 8 score, the median score is  $8 \times 3$  equaling 24 score and the highest score is  $8 \times 5$  equaling 40 score. At the second dimension that is the result expectation, the lowest score is  $7 \times 1$  equaling 7 score, the median score is  $7 \times 3$  equaling 21 score and the highest score is  $7 \times 5$  equaling 35 score.

As seen in table 1, novice teachers took 37.00 score as the lowest score, 74.00 score as the highest score and 60.52 score as the medium score from Classroom Management Self-Efficacy Convictions Scale. Besides, novice teachers express their opinions on the Classroom Management Self-Efficacy Convictions scale in the level of 'much agree' with 4.03 agreement degree. The mean score (60.52) gotten from the scale is higher

than the medium degree of scale (45) and it can be said that teachers agree in the level of ‘much agree’.

As seen in the statistics in the sub-dimensions of the scale, teachers express their opinions towards classroom management efficacy belief with the score mean of 32.84 and with the degree of 4.11 and in the result expectation sub-dimension teachers express their opinions with the score mean of 27.68 and with the degree of 3.95 and this means that they agree in the level of ‘much agree’.

While analysed the responses towards the classroom management efficacy belief sub-dimension of Classroom Management Self-EfficacyConvictions scale, descriptive statistics are presented in Table 2.

**Table 2**

*Descriptive Statistics of the Items Related to Classroom Management Efficacy Belief Sub-dimension*

Items	N	$\bar{X}$	SS	Agreement level
1. I know what I should do in an effective classroom management.	85	4.35	.81	Totally agree
2. I have no idea on what I will do for the unwanted situations that can occur in the classroom.	85	3.85	1.14	Somewhat agree
3. I can easily handle negative things in the classroom.	85	4.29	.78	Totally agree
4. I wish two teachers are in every lesson.	85	4.02	1.25	Somewhat agree
5. I am very anxious about being confronted with the students in the classroom.	85	4.15	1.18	Somewhat agree
6. Given half a chance, I want to lecture constantly in the apprenticeship.	85	3.64	1.35	Much agree
7. I can express my ideas on classroom management in every place.	85	4.35	.88	Totally agree
8. I can contribute logically in solving my friends' problems on classroom management.	85	4.18	.90	Much agree
Classroom management efficacy belief sub-dimension	85	4.11	4.67	Much agree

As seen in Table 2, novice teachers with 4.35 agreement degree express their opinions in the highest level ‘totally agree’ for the items of ‘I know what I should do in an effective classroom management’ and ‘I can express my ideas on classroom management in every place’. Novice teachers with 3.46 agreement degree express their opinions in the lowest level ‘somewhat agree’ for the item of ‘Given half a chance, I want to lecture constantly in the apprenticeship’. They express their opinions in the level of ‘much agree’ with 4.11 agreement degree towards classroom management efficacy belief sub-dimension. As analyzed the items in this dimension, novice teachers have positive views on the classroom management efficacy belief sub-dimension.

While analysed the responses towards the result expectation sub-dimension of Classroom Management Self-Efficacy Convictions scale, descriptive statistics are presented in Table 3.

**Table 3**  
*Descriptive Statistics of the Items Related to Result Expectation Sub-dimension*

Items	N	$\bar{X}$	SS	Agreement level
1. No matter how much I force myself to do, I don't think I can manage the class effectively.	85	4.22	1.13	Never agree
2. Students' success in lessons are directly related with teachers' effective classroom management.	85	4.15	1.03	Much agree
3. I don't like being assessed on how I manage the class.	85	3.74	1.10	Somewhat agree
4. The less complaints about class, the less unsuccessfulness of teacher on classroom management.	85	3.92	1.17	Much agree
5. I definitely think that I don't have any problems in classroom management while teaching.	85	3.67	1.22	Much agree
6. I wonder how much I have necessary skills on classroom management.	85	3.41	1.31	Much agree
7. When I am a teacher and lecture, I believe that I acquire much effective experiences on classroom management.	85	4.56	.82	Totally agree
Result expectation sub-dimension	85	3.95	4.02	Much agree

As seen in Table 3, novice teachers with 4.56 agreement degree express their opinions in the highest level ‘totally agree’ for the item of ‘When I am a teacher and lecture, I believe that I acquire much effective experiences on classroom management’. Novice teachers with 3.41 agreement degree express their opinions in the lowest level ‘much agree’ for the item of ‘I wonder how much I have neccesary skills on classroom management’. They express their opinions in the level of ‘much agree’ with 3.95 agreement degree towards result expectation sub-dimension. As analysed the items in this dimension, novice teachers have positive views on the result expectation sub-dimension.

According to the results, novice teachers have high level of classroom management self efficacy beliefs. This result can be explained because the novice teachers were prepared on classroom management in the process of their teacher education programme.

Giallo and Little (2003) have shown that classroom experiences and perceived preparedness significantly predict teachers’ self-efficacy in classroom management. This result of the study concurs with Özder’s results (2011) in terms of classroom management self efficacy. In addition to this, Rosasand West (2010) indicated that in-service teachers rate their beliefs regarding classroom management as positive. Stone (1964) and Briscoe (1972) also found that beginning teachers from 24 to 35 years old perceived fewer problems than teachers older than 35 or younger than 24 (cited in Hicks, 2012). Williams (1976) showed that beginner teachers who “were rated excellent by themselves or their principals” did not seem to experience fewer problems than did those who were rated as “average” (cited in Hicks, 2012).

### **3.2. Finding related to the second sub-problem**

The second problem of the study is to get answers to the question whether there are any difference in novice teachers’ views on pre-service teacher education according to independent variables (gender, school of graduation, field). The t-test results of novice

teachers' views on classroom management self-efficacy beliefs according to independent variables, such as gender, school of graduation, field are given in Table 4.

**Table 4**

*T-test Results Related to Novice Teachers' Views on Classroom Management Self-efficacy Beliefs According to Independent Variables (Gender, School of Graduation, Field)*

		N	$\bar{X}$	SS	sd	t	p
<i>Classroom management efficacy belief</i>							
	female	39	31.54	4.32	83	-2.426	.017
	male	46	33.93	4.72			
<i>Result expectation</i>							
	female	39	27.64	4.67	83	-.087	.931
	male	46	27.72	3.42			
<i>Classroom management efficacy belief</i>							
	Undergraduate	79	32.94	4.64	83	.725	.471
	Post graduate	6	31.50	5.28			
<i>Result expectation</i>							
	Undergraduate	79	27.73	4.08	83	.429	.669
	Post graduate	6	27.00	3.29			
<i>Classroom management efficacy belief</i>							
	Class teacher	18	32.22	5.53	83	-.625	.533
	Subject-matter teacher	67	33.00	4.44			
<i>Result expectation</i>							
	Class teacher	18	28.05	4.50	83	.442	.660
	Subject-matter teacher	67	27.58	3.91			

There is not any statistically significant difference in terms of school of graduation and classroom management efficacy belief [ $t(83) = -.725, p > .05$ ] and result expectation sub-dimension [ $t(83) = .429, p > .05$ ]. There is not any statistically significant difference in classroom management efficacy belief [ $t(83) = -.625, p > .05$ ] and result expectation sub-dimension [ $t(83) = .442, p > .05$ ]. In terms of gender, there is not any statistically significant difference in the result expectation sub-dimension [ $t(83) = -.087, p > .05$ ] but there is a statistically significant difference in classroom management efficacy belief [ $t(83) = -2.426, p < .05$ ]. Male teachers ( $\bar{X} = 33.93$ ) have higher level of classroom management efficacy beliefs than female teachers ( $\bar{X} = 31.54$ ).

According to Bandura (1997), self-efficacy can differ depending on gender in different cultural contexts. Saracaloğlu, Yenice and Özden (2013) found a statistically significant difference on behalf of male novice teachers in terms of classroom management self efficacy. This finding was interpreted by researchers in a way that men take place in administrative tasks in our society more frequently and, thus, male

novice teachers perceive themselves more efficient than female ones in administrative domains. Demirtaş, Cömert and Özer (2011) found a statistically significant difference on behalf of male novice teachers in classroom management sub-dimension of self efficacy perception. Demirtaş et al. (2011) associate this finding with the situation that men feel more confident than women at almost all subjects because of social norms and values.

### **3.3. Suggestions**

According to Darling-Hammond (2003), having positive feelings and thoughts of being a teacher depends on a good pre-service education. The findings of this study showed that novice teachers have positive classroom management self efficacy beliefs. To continue this positive classroom management self efficacy belief, school managers, counseling teachers and supervisors can give support to novice teachers. This study is limited to 85 novice teachers working in Hatay and their classroom management self efficacy beliefs. New studies can be conducted with a larger sample group and novice teachers' classroom management self efficacy beliefs that have different students (social, cultural, academic). In this study, data was gathered using the quantitative method. Qualitative (interview, observation, open ended questions etc.) and mixed method studies can be conducted to probe into self- efficacy beliefs.

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### ***3. Curriculum and Teaching Approaches***

### **3.1. The historical novel: Towards an alternative approach of history teaching**

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#### **Abstract**

*Teaching History within the school walls targets at presenting principal historical facts to pupils and simultaneously rendering pupils' perception of History acute whilst molding their historical conscience. Nevertheless, the materialization of these didactic aims along with the conceptualization of the notions of "time" and geographic element, or even the evolutionary process that takes place in everyday life throughout the passage of years might face an impediment from time to time; there seems to be a contradiction between those very didactic aims and the History teaching methods that make the lesson rather tedious. The Didactics of History as a field aims at making us have further thoughts over the very texture of teaching itself and the teaching of the particular subject as well. History teaching methods propose ways via which the educator is bound to acquaint him / herself with History in a multi – fold approach. In effect, this will result in being reverberated in his / her potential in teaching History lessons. After all, according to the modern trend of the new curricula, History lessons are founded on dialogical methodology and tend to be interactive. An alternative approach of historical knowledge is considered to be Literature, particularly, via the Historical Novel. Historical novels, in addition to the fictional element that they entail, are founded on factual truths which the literary author has researched into historical data and sources. Given that the educator in the context of the History class highlights the footnotes to his / her pupils, the latter get acquainted with these social constructs and are encouraged to realize that Literature constitutes a source for History itself, whilst History forms evidence for Literature. As a consequence, does a cohesive historical knowledge constitute the presence of historical reality and the linguistic / narrative representation of the social imaginary that is shaped within the historical novel?*

**Key-words:** Teaching History, History and story / narrative, historical novel

#### **1. Literature review**

The past makes up the primeval element of human societies mores and constitutions. Acquiring knowledge of History denotes that you can tame the past. According to the historian Hobsbawm (1997), the past can be defined as the constant dimension of the human conscience. All peoples do have history; nevertheless what sets the prehistoric societies apart from the modern ones is what Claude Levi Strauss (1968) calls the historical conscience, which means the rendering of the concept into actions of the past, the understanding of the present and the perspective of the future. History does not just happen; it is made from real people who might have faced challenges or were as uncertain about their future as we are about ours. It is important that pupils understand that when history is made becomes a piece of our world and a factor for our future decisions; our decisions will become tomorrow's history. One could claim that the realization of History in all probability amounts to the most significant form of revolution.

Thus, History teaching at school targets the development of pupils' historical conscience and their capacity for historical critical thinking. It is important that historical education facilitates the comprehension of certain notions, such as that of time, the geographic whereabouts or even the evolutionary process- meaning the main ideology of societies, as years go by, concerning matters, such as marriage, divorces, equality issues, etc. History teaching should encourage an empathetic approach of the course through learners' familiarization with the historical events. In this way, the class is conducted under appropriate circumstances so that the pupils may mature gradually in their way of thinking and, therefore, create links between their present and their future trying to learn and construct their future self with their present choices.

To grasp the great importance that teaching History has for young learners, we may take recourse to the words of the French historian Marc Ferro (1983). Ferro laid emphasis on the fact that "... the image we hold of ourselves and of the others stems from the History we have been taught in our childhood years" (p. 296). Familiarizing learners with the traces of the past aspires at attaching significations to the present and at the studying and the interpretation of historical events whose repercussions had a toll on a lot of members of contemporary and subsequent social groups.

However, we ought to observe that acquiring historical knowledge sometimes clashes with History teaching methods that render the course rather tedious. Many people uphold Martin Booth's (1987) point of view according to which historical thought is adductive and that in fact the approach of the historical past requires creativity and imagination. Contemplating over the nature of teaching and learning and thinking over the teaching of History, in particular, has led into the foundation of a separate branch of the Historical Science in 1980, the Didactics of History. The branch under question, in particular, was formed due to the emergence of many new historical materials, which sought after the establishment of edifying, learner – centered theories of learning. It deals with the promotion of History throughout the school years with the help of extra – curricular activities so that learners do not simply passively absorb historical knowledge.

The Didactics of History endeavors at promoting the critical reproduction of historical knowledge and the methodological substantiation of it from a very early time in formal education, recommending ways that are multi- fold. Children need to be able to see the world through the eyes of its participants to understand history and that there are multiple perspectives on the past. In search of alternative methods of teaching concerning the History lesson, it was suggested the "role -play" method. According to this method, teacher and learners assume roles of historical people and direct the place, consort with each other and materialize the story. This entertaining imaginary re - enactment takes place while it dawns on the students that they have to do with real people whose actions were dictated by ulterior motives.

The dramatization of the past promulgates the active - experiential learning, which targets at the sensitization of the facts, promotes empathy among learners, teaches them respect for the people and the facts and, as a result, the gap between the present and the past is bridged amusingly (Bloch, 1992). On the other hand, dramatization entails certain liabilities. Another activity that teaching suggests is the "eye - contact and the tampering with authentic or copies historical pieces" on part of the pupils so that they approach the History material in an alternative way (Aris, 1993, p. 37). This, certainly, has the goal to render pupils' intellect and the imagination acute no matter what their origin or / and their perceptive capability may be. Its purpose is also to activate pupils' interest for the historical era dating the exposed artifacts involved. The gradual evolution of the pupils' potential, such as the garnering of information, the

classification or the pinpointing of their age requires extra – curricular activities by the educators.

Undoubtedly, historical artifacts put in the creation of a narration of the past either in a direct or indirect way. Learners can get in contact with them in the context of organized visits to Museums, which are co – coordinated by the educators. According to many educators' point of view, these visits better facilitate pupils' impression of value systems of the past and provide them with the impetus to unleash their critical thought.

Afterwards, we should firstly take into consideration the power that is embedded in the ideology of the images of the History book, given that the messages of these images are in accord or at odds with what the written material of the book suggests. Secondly, we should bear in mind that today's society has been / is being transformed from an imagistic one to a virtual one. Therefore, the use of images or photographs by educators for the sake of a more alternative teaching of History seems to be absolutely justified.

The Didactics of History states that incorporating pictures in contemporary teaching realia aims at creating a reference context concerning the content of every single historical chapter, the hermeneutical function of historical notions and above all assisting pupils in learning new and potentially complicated concepts. Nevertheless, the educator's role in this case is vital because the interpretation of an image in the course of the lesson, before the teaching begins or an image adopting the role of a conclusion constitutes a process that requires the so – called image or iconographic literacy of the learners so that they are able to decode appropriately what they see. Correlative to the above – mentioned approach of History and according to research, it is slightly more efficient the one materialized through sketches, comics or cartoons (e.g., historical figures) (Sebba, 1995). This method sharpens pupils' acumen challenging them to discover hidden messages with the educator's help.

Having brought up the issue of images in general, we must take for granted that nowadays pupils are accustomed to a reality profuse with moving pictures. Accepting the widespread dissemination of the television, the movies and the DVDs, we are quick to sum up that these realia could be actually used after the right scheduling and judgment on behalf of the educators. Used in such a way they could enable pupils to wit 'making sense' of the past and not merely memorizing facts. This process involves knowledge acquisition, skills development and application of key concepts to an investigation set in a particular historical context.

On the foundations of what we have already stated, we must deduct the conclusion that pupils' desired acquaintance with History necessitates the enhancement of their empathy. Being historically empathetic denotes the pupils' ability to slip into the shoes of historical figures as much as one can, to grasp their thoughts and to relive the particular historical period if possible. The empathetic approach of the past is boosted by the narrative which re – enacts the past by reconstructing it with the aid of the imagination (Collinwood, 1946).

Narrative allows learners to become little by little familiar with elements that are essential in historical education, such as the concepts of time and dating (Cooper, 2004). According to the requirements of modern as well as traditional teaching, the educator may act as a helper of children's obtaining early time indexes by narrating historical facts, myths, legends or stories from the lives of famous historical people to his -her pupils. Pupils should become informed about people's motives and their emotional world to enrich their vocabulary, learn historical terms and be able to discriminate between the fictive and actual elements of the stories the educator tells.

The borders between Literature and History have never been crystal-clear. Historical narration and literary narration constitute two different genres, still as many studies indicate, both involve many common traits, such as the hermeneutic approach, the invocation to sentiment, the spiritual development and the admonishment. In neither Historical nor literary narration is reality reflected faithfully. The narrative techniques and the art of rhetoric which one may identify in them are similar. In addition, if, according to Collingwood (1946), a historical work superbly combines knowledge and imagination, we might wonder if the composition of historical knowledge denotes the presentation of the historical reality and the linguistic-narrative representation of the social imaginary which takes place within the historical novel.

Children's historical novels have a solid composition which is dispersed with fictive elements interspersed with historical information. By dint of its entertaining nature it is considered to transmit historical knowledge in a pleasant and effortless manner to young readers. Except for the element of fiction, the historical novel is based on a share of truth that the novelist has pumped from historical records and sources. A historical novel may be a work of fiction, but at the same time the author's effort to convey the socio-historical context of a past period in realistic details and, as promptly as possible, is obvious. Furthermore, the protagonists of the historical novel behave in relation to the age, gender, nationality and space of their whereabouts. Moreover, the protagonists converse with each other and in this way add up vivacity and persuasiveness to the novel. The narrative technique of a person's physical appearance in a children's historical novel functions as a means of attaching attributes to the protagonists and at the same time it may serve as a metonymic link between the internal and external cosmos (Docherty, 1983).

Overall, the historical novel embarks upon the construction of a dramatic structure of fictionalization and a plot with clear – cut beginning and end within a clear time context and constitutes a piece of work that successfully transmutes the yoking of myth and History; it balances the historical element with the imaginary one; it depicts the way that people faced reality that historical period without this diminishing its relevance with the present. These things make historical knowledge more digestible to every reader. Even though History is the means of the administration of the past, we could claim that the historical novel is the means that permits us to intellectually leap and imaginatively move within it.

According to the proposals of Didactics of History, reading and studying of a children's historical novel in the classroom may precede, go along with or follow History course. Given that the particular literary genre requires the involvement of other texts as well, today's educators demonstrate that an intertextual dialogue is being developed between literature and History. The aim of this dialogue is the pupils' critical and inter-cultural upbringing. This method of historical understanding pushes pupils towards comprehending that literature constitutes a source for History, while History constitutes a record for literature.

If the educator, along with the conduct of the History lesson, points out the existing footnotes to his pupils, the latter get acquainted with these social constructs. Students understand little by little that the actors in the novel have their own identity which substantiates the historical narration. They also absorb knowledge concerning the symbolic and linguistic historical concepts. As a consequence, they group their collected data, classify them and learn about the notions of individualism and classification of people and things given that these attributes have certain qualities and features.

Many people express the opinion that the revelation of the past through the author's imagination and ideological position constitute one of the best teaching tools. They help pupils, who are at a primal stage of their intellectual development, become conscious of the History of their country, the capabilities and the failings of their people. These realizations enable them to get to know themselves and reach maturity. Historical fictionalization acts as an improved version of History which presents the real, but the defective as well, given that it aims at being more realistic than the historical event, since it constitutes a better narration. Perennial values, essential ideals, deeds that bear out not only the virtues, but also the vices of a nation are represented in the plot of historical novels. In this way, historical novels complement the work performed by historians.

The co-habitation of historical narration with the particular historical reality cultivate children's yearning for positive thinking and action in the framework of their ensuing social integration (Nora, 1984). This becomes clear keeping in mind that history, when used as the name of a field of study, refers to the study and interpretation of the record of humans, societies, institutions, and any topic that has changed over time (Colinwood, 1946). It might dawn on children that they belong to a particular social group and on top of it if this group has common roots, this may trigger their interest in their ancestry (Moniot, 2000). This realization is highly possible that could happen to children after having read a children's historical novel, as long as, of course, their background allows it and parents are concerned about their children's perceptive enrichment. An additional perspective that this reading may lead to is the enhancement of children's national identity or the boosting of their patriotic sensibility. The author accomplishes to represent the scenery of distant heroic times that neither him / her nor the readers have experienced.

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### **3.2. Teacher improvement through the design, implementation and evaluation of a flipped classroom**

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#### **Abstract**

*The purpose of the specific research is the design and implementation of Flipped Instruction in a Geography lesson as well as the evaluation of its effectiveness. A semi-experimental design was followed for two classes of the 5<sup>th</sup> grade in a primary school. The experimental group attended 10 video-recorded lessons, while the control group followed the traditional teaching method. The integrated analysis of both the quantitative and qualitative data has shown that Flipped Instruction constitutes an effective pedagogical method for the teaching of Geography in the 5<sup>th</sup> grade of the primary school. What can be derived from the most important findings is that the specific model has helped the teacher feel more confident to experiment with new teaching approaches.*

**Key-words:** Flipped instruction, video-recorded lessons, collaborative learning, performance, satisfaction

#### **1. Introduction**

In nowadays' society of lifelong learning, teacher professional development throughout their teaching career constitutes a basic requirement of the teaching profession and consists of a plethora of demands, prioritizing the will to undertake and implement innovative activities in the school environment (Xochellis, 2005). In combination with the continuous scientific advances in the field of educational technology, there is a need for teachers to involve in a continuous process of educating themselves in order to be excellently trained in the production of updated teaching material (Pagge, 2006). The teacher engages himself/herself in a revising-questioning-repositioning process aiming at self-improvement (Kyriacou, 1997) in an institutional environment open to innovation, participation, development and research (Ifanti & Vozaitis, 2011).

#### **2. Flipped Classroom and Flipped Instruction**

Flipped Instruction (F.I.) is a type of Blended Learning. Throughout the international bibliography, the two terms, namely Flipped Classroom (F.C.) and F.I. have been quite often used as synonyms to describe the technique, the method or/and the model of teaching (Bergmann & Sams, 2012; Findlay-Thomson & Mombourquette, 2014; Fulton, 2012). To put it simply, what is being implemented in the F.C. are techniques dictated by the model of F.I. Apart from the Staker and Horn's theory (2013), other researchers have also added their own elements, especially to the technique of F.C. An important intervention was made by Bishop and Verleger (2013), who point out that the part of learning that takes place in the classroom is mainly based on collaborative group activities rather than lecturing. Through the simplest definition of the term F.C.,

Lage, Platt and Treglia (2000) make a distinction between the traditional and the F.C.: “Reversing the classroom means that what has traditionally taken place in the classroom now takes place outside the classroom, and vice versa” (p. 32).

Table 1  
*The Flipped Classroom*

	<b>Inside the classroom</b>	<b>Outside of classroom</b>
<b>traditional classroom</b>	Instruction and peer exercises	Individual exercises
<b>flipped classroom</b>	Instruction from student and Peer exercises	Video-lecture and individual exercises

### 3. Literature review

There have been numerous researches in the field of F.I., most of which concern case studies and have been conducted mainly in high schools and universities. This is due to the view that older pupils and adults can gain control of their learning, since, according to Knowles and Boyd (1970, as cited in Moore, 1987) “they have self-knowledge and can define their own actions” (p. 7).

#### 3.1. Performance

In the Greek educational system, the notion of school performance has been associated with the level to which the pupils have achieved the aims of the various cognitive subjects (Theodosiadou, 2013). According to Schultz, Duffield, Rasmussen and Wageman (2014), there is an increase in the level of pupil performance in a F.C. due to the following thematic areas: i) the fact that the pupils take control of studying ii) the technological benefits (pausing and repeating of the video lectures) which promote self- learning, and iii) the in-classroom time available for further support provided by the teacher.

Having ensured the above mentioned factors, several researchers have noticed an increase in their pupils’ performance (Moravec, Williams, Aguilar-Roca & O ’Dowd 2010; Ruddick, 2012). In a literature review conducted by Kandroudi and Bratitsis (2013), several schools have noticed an increase in performance after the implementation of F.C. Examples of these were the Byron High School in Minnesota, where the teachers record an improvement of the pupils’ performance from 29,9% to 73,8% in 2011, and the High School in Clintondale, where there was an increase of 33%. Moreover, a percentage of 20% of the pupils performed better at the following schools: in Geometry at the Clear Brook School, in History at the Forestwood School in Texas, in Maths at the Bullis High School in Potomac, and in Maths at the Baker Secondary School in Minnesota. In another survey conducted in all the classes at the

Classroom Window School (2012), 67% of the teachers reported an increase in their pupils' performance. There is, however, need for more research to be conducted (Bishop & Verleger, 2013; Findlay-Thompson & Mombourquette, 2014).

### **3.2. Satisfaction and Flipped Instruction**

Satisfaction is an emotional cognitive result showing the degree of a) the pupil's reaction to the values and the quality of knowledge and b) the motive for learning (So & Brush, 2008). Strayer (2012), who has studied satisfaction in F.C. in relation to video lectures, has come to the conclusion that what really matters is the material used. Ferguson and Defelice (2010) also state that satisfaction is closely related to the structure of the teaching method. In the case of F.C., however, structure concerns not only the video instruction, but also the structuring of the in-classroom time. This means that any possible failure existing in either of the two parts is considered to be failure of the teaching method as a whole. As far as satisfaction is concerned, pupils' opinions about F.C. tend to be positive in general (Bates & Ross, 2012; Bishop & Verleger, 2013; Butt, 2014; Gannod & Helmick, 2008; So & Brush, 2008), despite the occurrence of some negative results in surveys on pupils' preference for F.C. (Rock & Schullery, 2011; Schullery, 2011).

### **3.3. Collaborative learning and Flipped Instruction**

Collaborative learning is a pedagogical approach according to which a group of pupils work together or collaboratively in order to achieve their goals (Chen & Chang, 2014). In collaborative learning there is little guidance by the teacher, since pupils gain knowledge through group interaction (Kakana, 2008). An effective collaborative method of learning used in the specific research is that of "Learning Together" by Johnson and Johnson (1994). In collaborative learning, the in-classroom time is devoted to collaborative activities for consolidation and practice (Bergmann & Sams, 2012; Lage et al., 2000). The pupils are divided in work groups and exchange experiences and ideas, communicate with each other, cooperate on various activities, solve problems and do projects with the aim of fully exploiting the object to be taught (Douglas, 1997), as well as deriving satisfaction from the cooperative environment so that learning benefits are increased.

### **3.4. Geography in the 5<sup>th</sup> grade**

The purpose of this subject is to "help students acquire basic concepts in order to understand the interrelation and interaction between man and environment" (Pedagogical Institute, 2011, p. 3). As far as the F.C. in the teaching of Geography is concerned, there has been only one study, in which Malleson (2014) performed a study case in the Leeds University. The pupils showed greater involvement in the subject, while it was found out that cooperation reinforced satisfaction from the whole process.

## **4. The present research**

The purpose of the present research is to study the educational effect of the F. I. on the 5<sup>th</sup> graders' performance in Geography and examine whether the pupils, who work using this teaching methodology, will develop collaborative skills as well as whether their degree of satisfaction derived from the lesson will be increased compared to that derived from traditional teaching. More specifically, what is being examined is the effect of F.I. on pupils' performance, cooperation and satisfaction from the teaching process. Moreover, at the end of the teaching intervention, pupils' opinions on how they experienced F.I. are discussed.

Therefore, the research questions of the specific study are the following:

1. Is there a difference in the 5<sup>th</sup> grade pupils' performance in Geography between the experimental and the control group?
- 2 . Are there differences in the 5<sup>th</sup> grade pupils' performance in Geography among the internal consecutive measurements in each group?
3. Are pupils satisfied with the teaching method?
4. What are the pupils' opinions about the type of work they prefer to use in classroom?
5. What are the pupils' overall opinions about their participation in the F.C.?

## **5. Methodology**

### **5.1. Participants**

The selection of the sample was based on the sampling without possibility and the "Convenient sampling", in particular (Creswell, 2011, p. 182), in which the participants were willing and available to take part in the implementation of the research. The sample consists of 31 pupils of the two 5<sup>th</sup> grade classes of a primary school in a semi-urban area. The intervention group consists of 15 pupils, 7 boys and 8 girls, the highest percentage of whom (93, 3%) are Greek, while there is also a small percentage of pupils (6, 67%) who are of Albanian nationality. The control group consists of 16 pupils, 9 boys and 7 girls, most of whom (87, 5%) are Greek, while the rest of them (12, 5%) are of Albanian origin. Both classes belong to schools in the city of Volos, in central Greece.

Not only the pupils but also the teacher of the control group participated in the research, cooperating and following the necessary instructions for the distribution of the questionnaires. The latter was also willing to be engaged in two interviews, which were considered to be necessary for the implementation of the intervention.

### **5.2. Experiment tools**

Three questionnaires were distributed to the pupils of both classes to collect the quantitative data of the study. They consisted of open-ended, true-or-false and gap-filling questions whose purpose was to assess pupils' performance in Geography, namely to examine whether the degree to which the cognitive content which had been taught so far was consolidated. The level of success in each evaluation sheet was measured according to the 0-10 mark scale used for pupil assessment in the specific grade of the primary school. The worksheets of the two classes were evaluated using blind testing by both teachers, namely the teacher of the intervention group and the researcher. For the collection of the qualitative data the tools used were: interview transcripts (for the interview of the control group teacher), questionnaires with open-ended questions, a diary including comments on peer observation, and a chat transcription platform.

### **5.3. Procedure**

The present study constitutes a quasi-experiment using a mixed methodological approach. Such an approach was chosen due to the fact that it allows the researcher to collect and combine data from multiple sources in order to ensure full and in-depth understanding (Creswell, 2011). Data integration is a mixed method of research design, which led the researcher to the collection of quantitative and qualitative data, with the former supporting the latter ones. In this design, the two types of data were simultaneously collected throughout the research. The quantitative data concern the pupils' performance in Geography, while the qualitative ones refer to their satisfaction from the teaching technique used and the cooperation experienced. Both the intervention and the control group approached the same concepts in the subject of Geography using a different

methodology. More specifically, the control group worked in a traditional way of teaching, while the intervention group approached the same concepts using the F.I. model.

During the Geography lessons, which took place twice a week, the first five chapters were taught in the traditional way for both classes. For the following ten chapters, however, the F.I. method was used for the intervention group, while the control group continued being taught in the traditional way of teaching. Both pre- and post-testing were conducted for the collection of quantitative data from both groups.

#### **5.4. Designing Flipped Classroom**

To put it simply, what happens in the Flipped Classroom is that the typical lecture and the homework activities of a lesson are reversed. The F.C. consists of the instruction through video lectures and the in-classroom time, which is spent on collaborative activities. The out-of-class instruction concerns 10 lessons, planned on the LANS platform, each one of which was available to students in class so that they can be prepared for the next meeting (see Figure 1).

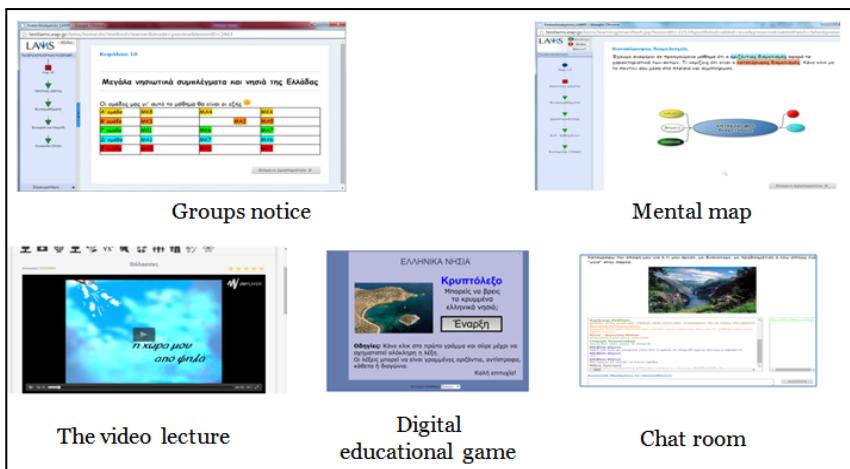


Figure 1: The out of class instruction delivery

Each instruction delivery consisted of several learning activities, such as:

- ✓ An announcement of the groups. These had been formed after a sociogram, where the pupils observed other classmates with whom they would be working in the following part.
- ✓ A mental map based on the constructive model.
- ✓ A video lecture, during which some instructions appeared on the screen, encouraging the pupils to cooperate and prepare a presentation of certain concepts in class.
- ✓ A digital educational game, drawn from the Web, which was based on the cognitive concepts of the specific lesson.
- ✓ A chat room, where the pupils were organized as a team and discussed various topics.

For the construction of the video lectures the following factors were taken into account: The Greek curriculum and the teacher guide (Pedagogical Institute, 2011), the Cognitive theory (Mayer & Moreno, 1998) for the construction of video lectures, the special characteristics of 5th graders who have little knowledge of the concepts taught, the individual learning styles and the preparation time, which includes time needed for the power point construction, the narration of the text and the recordings, and the montage of the final product.

The produced video was a movie produced by recording the power point slides using the Cantasia programme. Special attention was paid both to the balanced duration of the video, which lasts for six (6) minutes and the cognitive content, which had to be characterized by accuracy and a pleasant way of presentation.

The in-classroom time was made up of two lesson hours per week. In each lesson, the pupils were presented with the main concept of the certain lesson, which had been prepared beforehand.

Since this is a learner-centered model of instruction, the pupils were engaged in a number of activities which they did on their own, working in groups, with the teacher' role solely defined to writing the activities on the board at the beginning of the lesson. In this way, each group could work at their own pace, while the teacher was moving around the class, monitoring the process and working on the pupils' cooperative skills, when necessary. At the same time, a diary was kept with both the teacher's and the pupils' comments, providing valuable feedback for reflection and improvement not only of the digital but also of the teaching activities in the classroom. Moreover, such a practice aimed at helping the pupils understand the cognitive content and experience satisfaction, which, in turn, becomes a motive for the teacher's continuous professional improvement.

## 6. Results

### 6.1. Quantitative analysis

The Mann-Witney *U* test was used in order to examine whether there is a difference in pupils' performance in Geography between those who participated in F.I. and those who were taught in a traditional classroom.

The quantitative analysis showed that, at the beginning of the teachig intervention, there was a statistically significant difference between the averages of the two groups, indicating that there is no comparison between them. Moreover, there has been a steady increase in the performance of the intervention group accompanied by a stable decrease in the performance of the control group.

Table 2  
*Mann-Witney test*

Evaluation sheet	Group	Mean Rank	Average	Mann-Witney
E.S. 1	IG	10.70	7.3900	40.500***
	CG	20.97	8.8281	
E.S. 2	IG	12.03	7.5833	60.500*
	CG	19.72	8.4438	
E.S. 3	IG	16.93	8.0667	106.000ns
	CG	15.13	7.9188	

Note: \* $p \leq 0,05$  / \*\* $p \leq 0,01$  / \*\*\* $p \leq 0,005$  / \*\*\*\* $p \leq 0,0001$

Figures show that the differences among the measurements in Middle Rank within each group are statistically important, with the decline in the Middle Rank of the control group being the most significant one. In other words, a stable decline in the average performance of the control group, in contrast to the steady increase in the average performance of the intervention group, which, however, is not considered to be as important as the decline mentioned above. Such findings, if combined with the qualitative analysis and the satisfaction the pupils derive from the teaching technique, in particular, could better account for any possible increase or decline in the pupils' interest and involvement in similar activities.

### **6.2. Qualitative analysis**

The most significant finding of the research is the difference between the two schools in terms of the pupils' preference for the cooperative way of working. Similarly, the reasons for which pupils show preference for cooperation in the classroom are of equal importance. It is possible that this differentiation before and after the intervention is due to the implementation of the cooperative model of the 'Learning Together' method for the intervention group.

The data collected were grouped under two thematic units, namely satisfaction from the Geography lesson and cooperation. What was also derived from the intervention group was learners' autonomy, as well as the advantages and disadvantages of F.I. with the use of the LAMS platform.

Satisfaction: satisfaction from the instruction method, difficulties, desire for changes:

**Table 3**  
*Positive Answers regarding Satisfaction*

	Before		After	
	IG	CG	IG	CG
Questionnaire	10	16	15	13
Chat	—	—	25	—
Diary	—	—	9	—
Interview	—	—	—	None

The qualitative analysis showed that the satisfaction derived from the instruction method increased within the intervention group, while it decreased within the control group. Some of the pupils' answers are indicative of such a difference:

PBS: "I like it. We learn in a different way!"

Cooperation refers to the desire to cooperate in the classroom, the notes and comments made on successful cooperation during group work and to the pupils' impressions.

**Table 4**  
*Positive Answers regarding Cooperation*

	Before		After	
	IG	CG	IG	CG
Questionnaire	12	19	19	13
Chat	—	—	6	—
Diary	—	—	31	—
Interview	—	—	—	Rarely

The level of desire for cooperation within the intervention group increased, in contrast to that within the control group, which declined. In expressing their opinion, a pupil says: "I like working with others because I am having a great time".

The evaluation of the F.I. was conducted using a questionnaire.

**Table 5**  
*Evaluation of Flipped Instruction*

	Autonomy	Advantages	Disadvantages
Questionnaire	29	25	5
Diary	12	37	14
Chat	44	41	19

Finally, the evaluation of the F.C. revealed certain advantages, such as the teacher's video lessons. The main disadvantages were the two video lessons borrowed from Arnos, which is an independent organization that provides video lessons.

## 7. Discussion

The integrated analysis has shown that F.I. is an effective teaching method for the 5<sup>th</sup> grade Geography. More specifically, it has been observed that the average performance of the pupils in the intervention group has steadily increased. What is more, in contrast to the control group, there has been significant increase in the level of satisfaction derived from the teaching approach and the degree of willingness to cooperate in the intervention group. Another finding, which was found in literature but concerned older pupils, was the capability for autonomous learning, which, however, deserves further investigation.

As far as the teacher is concerned, her satisfaction and the feedback received during the construction of the video lessons are to be mentioned. Teachers who aim at professional development need to be informed about innovative pedagogical methods

and try implementing them. In nowadays' information society, more and more educational blogs appear at an international level and can promote communication, exchange of practices and mutual support among teachers. We should, therefore, aim at continuing to experiment on new pedagogical approaches using the research methodology, which can contribute to personal and professional development.

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### **3.3. Questioning in primary school mathematics: an analysis of questions teachers ask in mathematics lessons**

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#### **Abstract**

*The purpose of the present study was to examine the place and frequency of questions addressed by primary school teachers to children when teaching mathematics. For this purpose, observation as well as interviews took place with two experienced in-service primary school teachers in the course of four mathematics lessons. Observation data showed that probing questions were rarely used by either teacher. One of the teachers asked more factual questions overall than the other teacher who mostly posed guiding questions. In the interviews, both teachers recognized that particular parts of a lesson -in relation to the mathematical content involved- allow for particular types of questions asked by teachers. The importance of questioning in mathematics teaching and learning is revealed.*

**Key-words:** Questioning, mathematics teaching, teacher questioning, communication

#### **1. Introduction**

Research examining teacher questioning has shown its importance in the question-answer sequence between teachers and students in the classroom setting. In particular, teachers' questions are of significant value for many –among others – instructional purposes, enhancing students' learning by developing critical thinking skills and challenging their deeper understanding and engagement in the classroom (Caram & Davis, 2005). Because questioning has been considered an important part of teaching and assessment, curricula often put emphasis on the development of appropriate teacher questioning techniques in order to promote the learning process.

#### **2. Theoretical framework**

##### **2.1. Questioning in the mathematics classroom**

Focus on the use of questioning in teaching mathematics (e.g., Hattie, 2009) supports the idea that teachers' questioning strategies are important for the instructional process because it is mainly used for knowledge construction. Teachers usually ask questions in mathematics lessons in order to extend students' ideas and help them construct scientific knowledge. Questioning has also great effects on student achievement in mathematics: when students are actively engaged in discourse that challenges them to explore, communicate, and justify their own mathematical ideas, they are found to build a powerful understanding of mathematics (Boerst, Sleep, Ball, & Bass, 2011). Additionally, higher student achievement and deeper levels of thinking is correlated with children's exposure to communication through meaningful teacher questioning (Stein, Grover, & Henningsen, 1996). Student questioning is also of great importance, as it promotes students' active learning and metacognition (Wong, 2012). Indicative is the

importance that Danish curriculum addresses to questioning in its latest reform where emphasis is placed on ‘being able to ask and answer questions in and with mathematics’ as one of the eight mathematical competencies (Niss & Hojgaard, 2011, p. 53).

Piccolo, Harbaugh, Carter, Capraro and Capraro (2008) presented data that showed a rich and meaningful discourse between teachers and students in a middle-school mathematics classroom in which both teacher-generated and student-initiated questioning took place. Although students were mainly found to respond to teachers’ questions rather than ask their own questions, when they were engaged in teachers’ conversation, teachers tended to provide more detailed explanations and often embellished with new examples. This finding suggests that teachers may follow particular patterns in their teaching and ask particular questions, as the teaching process implies so.

Research attention has been paid to the kinds of questions teachers ask. In order to study the interactive structure of dialogue in teaching mathematics among pre-service elementary teachers, Moyer and Milewicz (2002) identified various types of questioning that can be used to assess and understand children’s thinking and mathematics. They found that some participants had difficulty using, interpreting and responding to open-ended questions because they did not know how to respond to children’s unexpected answers. Although these findings show us a great tendency, it is very interesting to see what happens with more experienced teachers who may have more effective questioning strategies. Sahin and Kulm (2008) described an analysis of the place and frequency of the types of questions asked in a case study of a first-year and an experienced mathematics teacher. They revealed that both teachers asked many more factual questions compared to other types of questions, suggesting that this may happen because factual questions – that ask for a specific final answer – can be asked any time during the lesson with any content. However, probing questions which ask for clarification, justification or explanation were more frequently asked during the summary part of the lessons than in other parts. Questions that guide students to discuss problems and use mathematical concepts and procedures (guiding questions) were rarely asked.

Teachers’ tendency to ask many questions, mainly those of low cognitive demands, was also stated by Mc Comas and Abraham (2004) who found that teachers instead of asking questions that probe student understanding generally ask leading or recall-oriented questions. Kosko, Rougeé and Herbst (2014) propose a possible explanation for that tendency: teachers do not connect the teacher’s use of questioning process with facilitating mathematical argumentation in the classroom and, consequently, have different interpretations of mathematical argumentation and its link to questioning from what reformers in mathematics education envision. Significant changes in novice and experienced mathematics teachers’ questioning techniques is possible to happen through school-based professional development, as Ong, Lim and Ghazali (2010) showed in their case study in Malaysia. In particular, the experienced teachers moved away from routine factual questions and were able to generate questions to probe students’ thinking. Although novice teachers showed fewer changes compared to experienced teachers, Ong et al. (2010) pointed out the importance of building mathematical knowledge through questioning techniques.

## **2.2. The purpose of the present study**

Given that questions are asked in the mathematics classroom for several reasons, the most important of which might be as part of a tool for teaching, a deeper concern about how questions are asked may arise. The purpose of the present study was to examine the place and frequency of questions addressed by primary school teachers to children when

teaching mathematics. In particular, three main research questions were addressed: a) Are there specific types of questions used by teachers in teaching mathematics?, b) Are these question types differentiated in terms of their frequency use?, and c) Why do teachers use different types of questions?

### **3. Method**

#### **3.1. Participants**

Two experienced in-service primary school teachers who hold a University Bachelor degree in Education participated in the study. At the time of the study, Teacher A, a man with a 16-year teaching experience was teaching Year 5 in a public primary school in the wider area of the prefecture of Pella, whereas Teacher B, a woman with a 20-year teaching experience was teaching Year 2 in a public primary school of the urban area of Thessaloniki. They were both selected due to their great interest in mathematics education and their participation was voluntary.

#### **3.2. Design**

For the purpose of the present study, data were collected via observation and semi-structured interviews over a period of two weeks. Observation took place during two subsequent mathematics lessons (2X45') for each participant in the classroom in order: a) to identify whether particular types of questions were implemented in their classes and b) to study the frequency of these types of questions. At the time of observation both participants were in summary chapters at the end of a unit: Teacher A taught units of linear measurement and geometry, whereas the classroom of Teacher B dealt with multiplication and division operations. A protocol was designed and used in order to observe the teacher's questions asked as well as their frequency.

The questions observed were of three types, namely probing, guiding and factual questions, and were based on Sahin and Kulm's (2008) classification and research tool. Probing questions were those used when a teacher asks students: a) to explain or elaborate their thinking, b) to use prior knowledge and apply it to a current problem or idea, or c) to justify or prove their ideas (e.g. '*How do you know that...?*', '*Can you explain why..?*'). Guiding questions were those observed when a teacher asks students a) for a specific answer or the next step of solution when they are confused or stuck, or b) to think about or recall a general strategy (e.g. '*What was your strategy?*', '*What will you do next?*'). Factual questions were classified as those when a teacher asks for a specific fact, a definition, a factual recall or an answer to an exercise or the next step in a procedure (e.g. '*What number did you get to?*', '*What is the definition of ...?*'). Finally, questions that could not be categorized in any of the previous categories were called non-categorized questions (e.g., '*Are you ready?*', '*Are you tired?*').

Interviews, which consisted of 14 questions, were conducted with the teachers to further investigate their perceptions of questioning in mathematics as well as issues related to reasons for asking particular types of questions in mathematics lessons.

## **4. Results**

### **4.1. Observation data**

#### **4.1.1. Overview of questions**

Data on the total number of questions asked by the two teachers per lesson (Figure 1) show that both teachers addressed about the same number of questions in their lessons: in particular, teacher A addressed 150 questions, slightly fewer than Teacher B who addressed 170 questions.

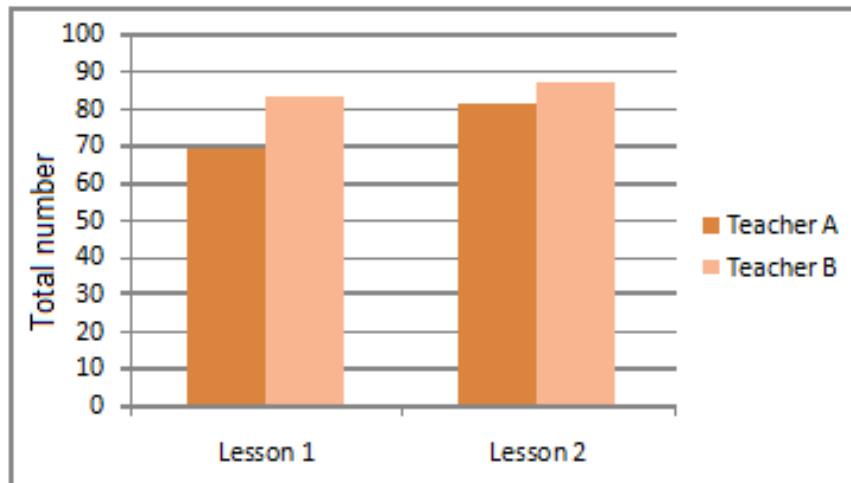


Figure 1: Number of questions addressed by both teachers in each lesson

In both lessons, Teacher A addressed on average more whole-class questions (about 53%) rather than questions to individual students, whereas Teacher B posed mainly questions to individuals (about 57%). Figure 2 presents the percentage of whole-class and individual questions used by the two participants.

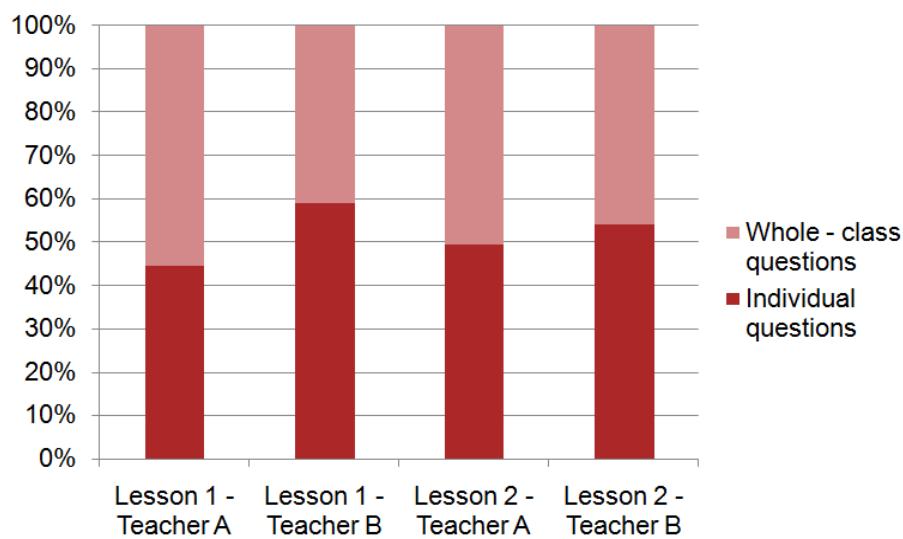


Figure 2: Percentage of questions addressed to whole class or individuals by both teachers

#### 4.1.2. Types of questions

Probing questions were rarely used by either teacher in both lessons observed (7,32% and 8,42% for Teachers A and B, respectively). Teacher A mostly posed guiding questions: almost 50% of his questions were guiding questions similarly addressed to both lessons. On the contrary, guiding questions were asked by Teacher B neither as frequently as Teacher A did nor consistently throughout the lessons (45,78% and 14,45% for Lessons 1 and 2, respectively). An average of 41% of all questions for Teacher A was factual questions, a percentage that varied across the lessons (about 47% and 35% in Lessons 1 and 2, respectively). Teacher B asked more factual questions overall (53%) which varied from 37% in the first lesson to 69% in the second lesson. This large deviation observed in Teacher B's use of factual and guiding questions across the two lessons may be due to the course content: in the first lesson, students were asked to apply techniques and Teacher B addressed more guiding questions for students to go

through certain steps. Figures 3 and 4 summarize the percentage of the types of questions asked in both lessons for Teacher A and B, respectively.

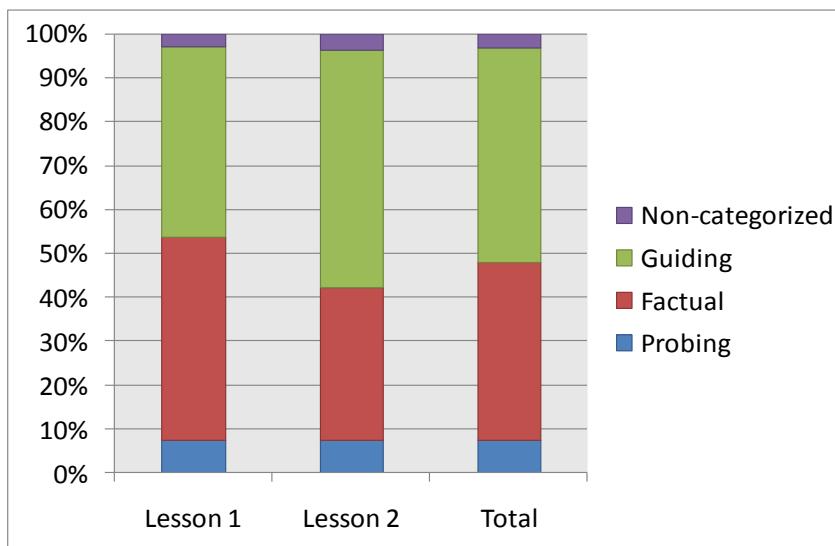


Figure 3: Frequency and types of questions by lesson for Teacher A

The majority of whole-class questions were guiding questions for Teacher A, whereas Teacher B posed more probing questions to the whole class. Figures 5 and 6 present the frequency of whole-class and individual questions depending on the question types for Teachers A and B, respectively.

#### 4.2. Interview data

Both teachers recognized that particular parts of a lesson -in relation to the mathematical content involved- allow for particular types of questions asked by teachers. For example, asking probing questions were considered more appropriate for the summary part of a lesson, whereas factual questions for the introduction part of a lesson when checking previous knowledge (e.g., ‘*What are the nominator and denominator in a fraction?*’, ‘*Do you remember what fractions are equivalent?*’). The difference in frequency use of questions across the two lessons, depending on the content they aimed to teach supports the idea that teachers do use specific types of questions in certain conditions.

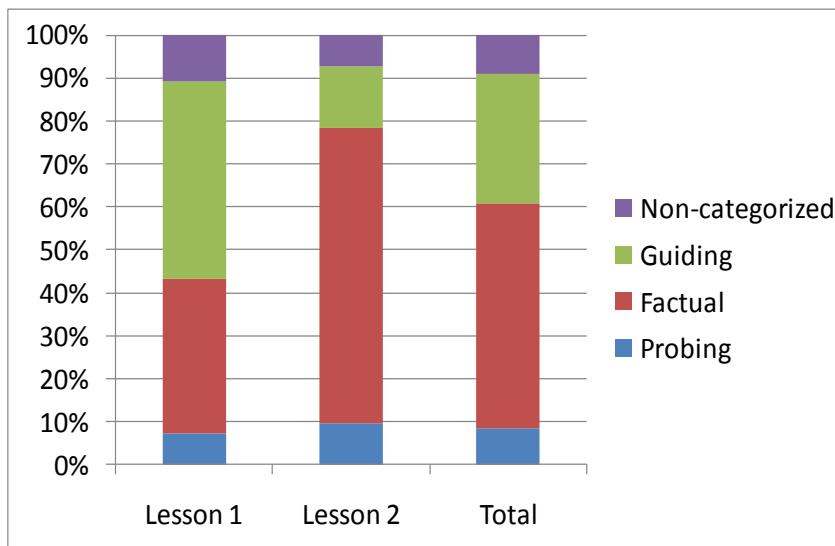


Figure 4: Frequency and types of questions by lesson for Teacher B

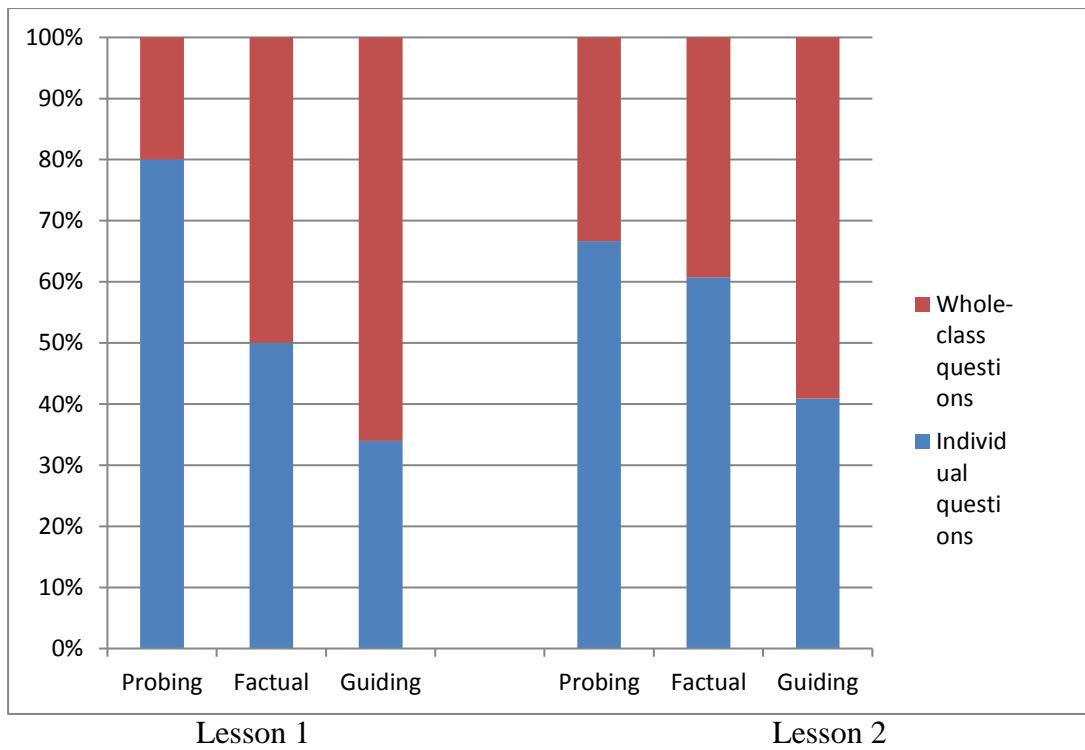


Figure 5: Percentage of whole-class and individual questions by types of questions per lesson for Teacher A

Probing questions were highly valued by both teachers who believed that this type of questions give children the opportunity to justify their ideas and improve their thinking and that they should be addressed more frequently in mathematics lessons. However, observation data revealed that the opposite really happened. Guiding questions were mostly selected in order to help students keep up with the class, particularly when calculations and certain processes on techniques are carried out. For example, Teacher B mentioned that she uses guiding questions in order to teach her students units and tens with the use of abacus (e.g., '*Shall we put them all together and count them?*'). Although factual questions were observed to a great extent (Teacher B, in particular, asked more factual than other types of questions), both teachers in the interviews seem to avoid them and only use them in order to monitor and recall their students' understanding.

As both teachers realize, the act of asking a question with specific indicators is cognitively demanding and requires that they know their learners' mathematical knowledge well. Interestingly, Teacher A stated that he never poses questions that students may not be able to answer, as this may lead to disappointment on the part of the students. Similarly, Teacher B explains her students' difficulty in answering a question due to her poor wording of the question. They both agree that they address questions to the whole class; they only pose questions individually to certain students when they acknowledge that these students face difficulties. Finally, they do not prepare their questions in advance; they rather prefer to ask questions depending on students' behavior.

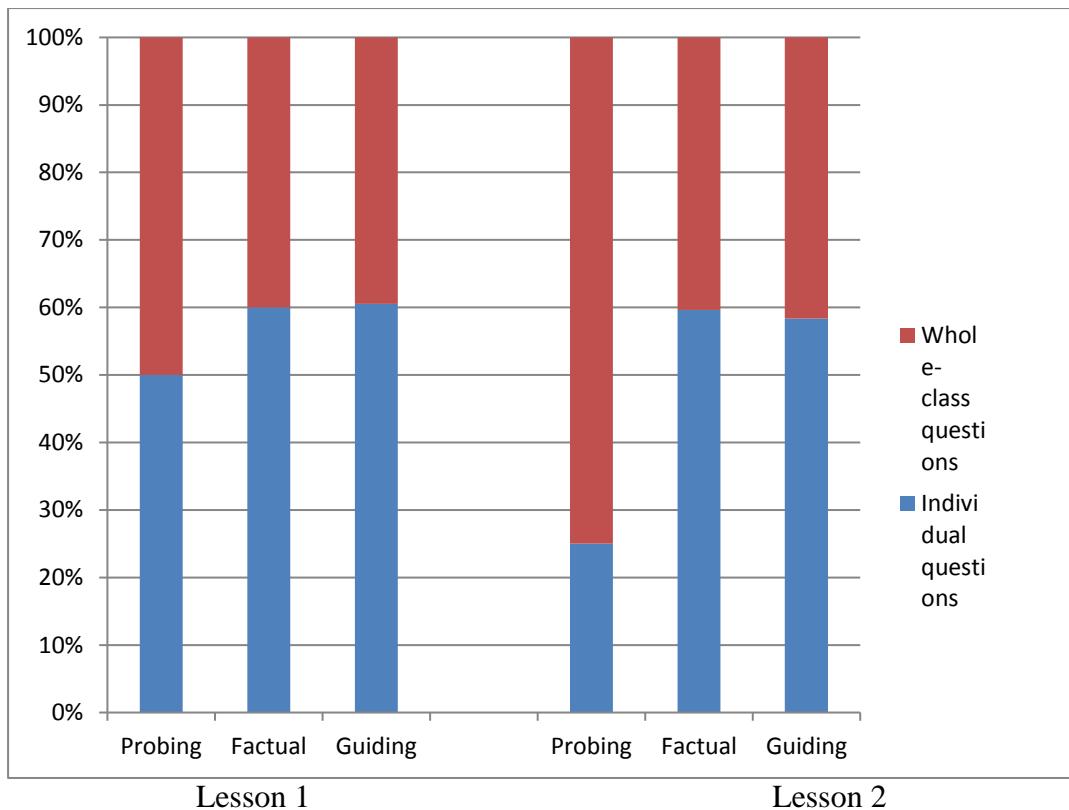


Figure 6: Percentage of whole-class and individual questions by types of questions per lesson for Teacher B

## 5. Discussion

Different types of questions were found in the study: probing, guiding and factual questions were addressed by both participants when teaching mathematics. This finding is in accordance with Sahin and Kulm's (2008) results. Their frequency of use, however, varied according to their purposes. One of the teachers asked more factual questions than the other teacher who mostly posed guiding questions. Results revealed not only an inconsistency between teachers' use of questions but also an inconsistency between what was observed in the lessons and what was said in the interview. In particular, very few probing questions were found in the observation, although both teachers highly valued them in the interview.

Specific types of questions serve certain educational functions and, thus, are used in certain parts of a lesson. As both teachers mention, factual questions requiring pre-scribed responses are placed in order to check students' understanding and recall their previous knowledge. That is the reason why Teacher B prefers factual questions at the beginning of a new lesson when checking her students' previous knowledge of a mathematical concept in order to remind them of its basic information. The finding that the questions are very much lesson dependent – which was revealed in both the observation and interview - is in line with Sahin and Kulm's (2008) data. It seems that teachers consistently pose questions depending on the mathematical content they aim to teach and their particular expectations of students' performance (Ong et al., 2010).

There was little consistency in the question types which seemed to prompt whole-class or individual work. In particular, whereas guiding questions were the main type of questions that the Teacher A addressed to whole class, Teacher B used this type less frequently than whole-class questions. She asked more probing questions in the whole

class instead. This finding, however, may be explained by the initial differences found in teachers' frequency use of question types.

Findings of the study reveal the importance of questioning in mathematics teaching and learning in the primary school. Educators need to understand that sometimes it is more effective to ask a question instead of telling students what to do (Reinhart, 2000). It can be recommended that in-service training should be provided to teachers; namely, they should be trained how to develop a questioning style and skills to spontaneously guide children through investigation in mathematics, promote classroom communication and mathematical argumentation as well as stimulate children's mathematical thinking. Then, teachers' conceptions and practices can be aligned with what mathematics education curricula envision (Kosko et al., 2014), while questioning can be of great benefit for both teachers and students. Last but not least, it is also very interesting to study student questioning in the mathematics classroom and its contribution to mathematical knowledge construction.

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### **3.4. A teaching approach regarding presentation of amplifiers to future electronic engineering educators**

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#### **Abstract**

*A difficult topic regarding education of future electronic engineers is amplifiers which lie at the core of most analog electronics courses and, indeed, most electronic engineering syllabi. It has been observed that the diversity in both the amplifier types and the modeling and calculation processes makes it difficult for students to develop a general and unified view of the subject. Taking the above observation into account, the course in Electronics offered at the Electronic Engineering Education major of the School of Pedagogical and Technological Education (ASPETE, Athens, Greece) has been partly re-oriented in that, in addition to studying basic aspects of specific amplifiers (such as transistor or operational amplifiers), it puts emphasis on the presentation of amplifiers in a general and unified manner. The course follows an induction-production approach and can address audiences with diverse mathematical and/or technical background. In an attempt to evaluate the effect of the applied approach, the students are asked to describe the content and the particular topics of a 30-hour module on amplifiers, each topic given in relation to the required teaching time and the respective literature.*

**Key-words:** Engineering education, teacher education, electronics teaching

#### **1. Introduction**

Though courses on electronic engineering usually aim at students and future engineers developing the necessary theoretical and technical background to face the challenges of an ever changing profession, when it comes to future educators, it is equally important the various electronic engineering topics be presented in a generalized, unified and well structured manner so that students (and future educators) develop the appropriate background for their future teaching assignments.

A difficult topic in that respect is electronic amplifiers which lie at the core of most analog electronics courses and, indeed, most electronic engineering syllabi. It has been observed that the diversity in both the amplifier types and the modeling and calculation processes makes it difficult for students to develop a general and unified view of the subject. More specifically, it has been noticed that student have difficulties in comprehending the common background of the various amplifier types which, in turn, could be an obstacle in their future efforts to convert their knowledge into a viable and efficient teaching practice.

## 2. Course description

In order to help the students improve their grasp of electronic amplifiers, the corresponding course in Electronics offered at the Electronic Engineering Education major of the School of Pedagogical and Technological Education (ASPETE, Athens, Greece) has been partly re-oriented in that, in addition to studying basic aspects of specific amplifiers (such as transistor or operational amplifiers), it puts emphasis on the presentation of amplifiers in a general and unified manner; what is most important is that it puts emphasis on the interrelation between the general analysis of amplifiers and the specific amplifier types that the student may encounter. The course follows an induction-production approach; the students are first introduced to basic amplifier circuits (e.g., transistor-based or operational amplifiers) before they encounter a more general presentation of the various amplifier types including their modeling by means of common Thevenin/Norton equivalent circuits and low-pass and high-pass filters. The next step (quite essential for the instruction process) is the application of the general theory to specific amplifier circuits including the ones already presented during the starting lectures of the course.

To make the course more flexible and adaptable to the particular class needs, the overall course is organized in two sections: Section A ignores frequency effects (the amplifiers are considered to operate in the mid-frequency region), while section B takes into account the frequency response of amplifying circuits. Depending on the background and competence of a particular class and the teaching time available, the course can be either limited to section A or include aspects (or the whole) of section B, which is considered more advanced and difficult.

Section A (where frequency effects are practically ignored) starts with basic bipolar-transistor (BJT) amplifiers (of the common-emitter, common-collector and common-base type) so that the students can be introduced to basic concepts and parameters associated with amplifier circuits, such as transistor modeling, and gain both input and output impedances. The limitations of the analysis (small signal, medium frequency band) are clearly explained so that the students start forming a more general picture. This part of section A may include field-effect-transistor (FET) amplifiers so that the students can appreciate similarities to and differences in BJTs and, in this way, improve their grasp of the transistor amplifier topic. Finally, starting from a more thorough analysis of the DC and the dynamic load lines, the students are introduced to the basic facts and ideas of transistor amplifier design (Malvino, 1999).

The second part of section A deals with the basic concepts and parameters of the operational amplifier including gain, as well as input impedance and output impedance. The analysis includes a presentation of the negative feedback concept, first on a block-diagram basis and then in association with the basic inverting and non-inverting amplifier circuits as well as with the virtual ground and virtual short circuit concepts. Though it is a topic of section B nominally, this part may also include a short introduction to the frequency dependence on the amplifier gain in terms of a typical gain-frequency curve (Jaeger, & Blalock, 2010; Malvino, 1999).

The third part of section A is particularly important, since it deals with amplifiers from the general perspective of Thevenin/Norton equivalent circuits (both open-loop and close-loop arrangements). Amplifiers are considered to be of four 4 basic types (voltage/current controlled voltage/current sources); each type is associated with particular input and output parameters and type of application. Among others, this part illustrates the positive effects of negative feedback and (though nominally a topic of section B) addresses the basic frequency dependence on the amplifier gain by using two simple models, those of the low-pass and the high-pass filter. An essential aspect of this

part is the presentation of how specific amplifiers examined previously fit in the general analysis which is then applied to more complex amplifier circuits.

Section B deals with frequency effects and it is considered to be a more difficult subject than that of section A for a number of reasons (e.g., the mathematics involved). The instructor may adapt his/her teaching depending on the background and competence of his/her class, the time available, etc.

This section starts with some basic concepts and ideas related to frequency effects, such as the concepts of frequency response and transient analysis, the sinusoidal and step response of linear circuits, the concept of transfer function as well as the basic equations regarding low-pass and high-pass (passive) R-C filters. It also presents a typical gain-frequency curve and the associated critical frequencies (Jaeger & Blalock, 2010).

The next part of section B starts with the high-frequency modeling of BJTs and proceeds with a simplifying analysis of the frequency response of CE or CC amplifiers (by using the low-pass and high-pass filter notions presented in the first part). Section B continues with the frequency effects in operational amplifiers and concludes with a more general issues involving stability analysis and Nyquist diagrams (Jaeger & Blalock, 2010).

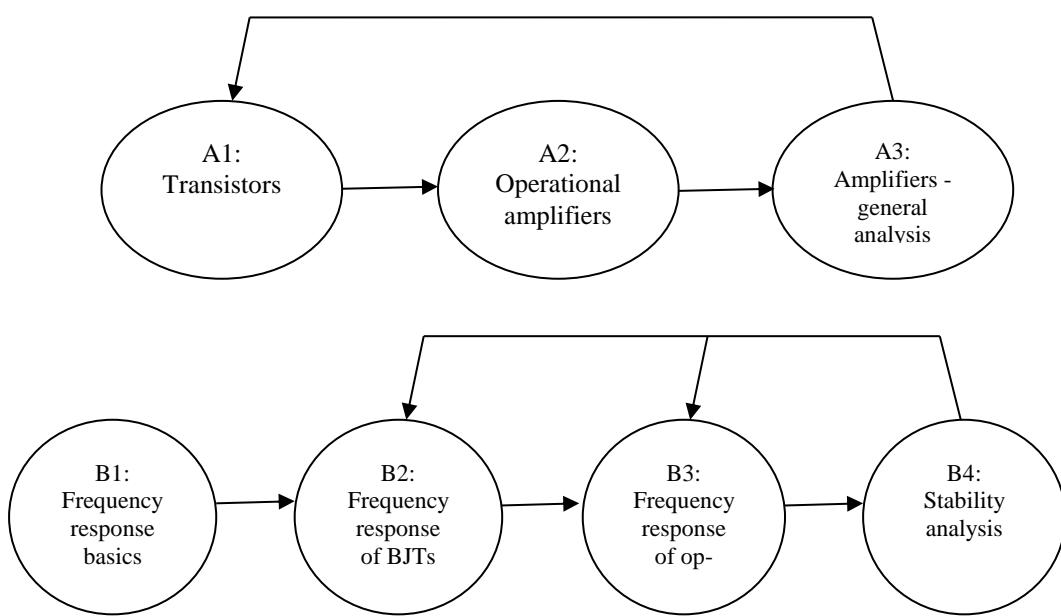


Figure 1: The course's flowchart

### 3. Students' assignment

In an attempt to evaluate the effect of the applied approach (and, at the same time, interconnect the technological and the pedagogical aspect of the presented material) the students were asked to describe the content of a 30-hour module on amplifiers. Due to the difficulty in dealing with frequency effects for students that are not yet familiar with advanced aspects of electronics, the assignment was limited to section A. The students were asked to indicate the exact topics to be examined in relation with the required teaching time and literature (specific chapters from up to four books available in the School's library) and encouraged to consider alternative course plans (e.g., operational

amplifiers to be taught before transistors, Sedra & Smith, 2004). The students were also asked to fill in a brief questionnaire regarding the above assignment.

Table 1

*Questionnaire to Students and Results*

	STATEMENT	RATE (%)				
		5	4	3	2	1
1	The theme and purpose of this type of instruction was easily understood	46%	35%	11%	4%	4%
2	This type of instruction improved my understanding of the material.	35%	37%	16%	8%	4%
3	I learned what material was most important during this type of instruction.	31%	38%	19%	4%	8%
4	This type of instruction helped class participation and involvement.	19%	31%	31%	12%	7%
5	I enjoyed the way topics were covered by this type of instruction.	27%	54%	12%	3%	4%
6	I felt rushed during this method of instruction.	15%	22%	24%	22%	17%
7	I remember information better when it is covered by this method of instruction.	15%	42%	31%	8%	4%
8	The level of class activity was higher during this method of instruction.	19%	27%	31%	15%	8%
9	This type of instruction was usually interesting to me.	19%	46%	8%	23%	4%
10	Overall, I think this method of instruction should be used with students taking this course in the future.	58%	15%	8%	15%	4%

*Type of instruction: Lectures (and lab exercises)*

*Number of students: 78*

*Rating: 5= strongly agree, 4= somewhat agree, 3= neither agree nor disagree, 2= somewhat disagree, 1= strongly disagree*

Students' characteristic comments:

- *The exercise was interesting and is very good to have a student the opportunity to get a better grade through this exercise.*
- *I would point out that it should be given greater score for the realization of work.*
- *I think it was all very carefully structured. They helped me immensely in understanding the concepts.*

#### 4. Discussion and conclusions

This paper presents a course in electronic amplifiers which, in order to help students obtain a better grasp of the amplifier subject, tries to present amplifiers in a unified and well structured manner; moreover, through an induction-production approach it illustrates the interrelation of specific amplifier cases (such as, transistor and operational amplifiers) with more general models involving Thevenin/Norton equivalents of the input and output loops.

The described course is suitable for audiences with diverse mathematical and/or technical background and can be easily adapted to the time available and the particular needs of the class. For example, the instructor may choose to focus on section A (frequency effects ignored) or he/she may extend his/her teaching to some or the whole of section B (frequency effects). It is also up to the instructor to determine the range and depth of the analysis including the use of mathematics.

As a part of the course, the students were asked to describe a 30-hour module on amplifiers. The corresponding questionnaire shows that the majority of students felt that this assignment helped them get a better grasp of the amplifier subject.

Due to the rather large size of the class (in connection with the shortage of teaching personnel), the instruction of the course's theoretical part was mainly based on lectures. The plan is to enhance students' role through, for example, their participation in assignments and/or small projects.

Difficulties and misconceptions on behalf of the students were observed during the course. These mainly regarded the load line (particularly the dynamic one), the definition and use of the dB unit and the interrelation between the closed-loop gain approximation and the “virtual ground” and “virtual short circuit” notions.

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## Annex: Course outline

Table 2

*Course Outline, Prerequisites: Diode Basics, Transistor (BJT and FET) Basics*

Section A	30 hours
Basic amplification parameters	2
Bipolar transistor (BJT) amplifiers (CE, CC, CB)	4
Basic principles for designing BJT amplifiers	4
Basic field-effect transistor (FET) amplifiers	4
The differential and operational amplifier (basic concepts and parameters)	2
The concept of negative feedback	2
Non-inverting and inverting amplifiers	4
General presentation of amplifiers	4
Open-loop amplifiers	
Closed-loop amplifiers	
Application of the general analysis to the specific types of amplifiers already examined	4
Section B	14 – 26 hours
Frequency effects (basic facts and notions)	2 to 4
The bipolar transistor at high frequencies – frequency response of transistor amplifiers	4 to 6
Frequency response of operational amplifiers	4 to 8
Stability analysis (optional)	4 to 8

## Authors' Short CV:

**G. K. Pagiatakis** received his BSc degree in Electrical Engineering from the National Technical University of Athens, Greece, in 1985 and his PhD degree in Optical Electronics from Imperial College, London, UK, in 1990. From 1996 to 2005, he was with the Hellenic Telecom Organisation (OTE) S.A. where he was actively involved in the telecommunication support of the Athens Olympic Games. He is now an Associate Professor in Optical Communications at the School of Pedagogical & Technological Education, Athens, Greece.

**N. F. Voudoukis** received a BSc degree in Physics from Athens National University, Athens, Greece, in 1991, a BSc in Electrical Engineering from the National Technical University of Athens, Greece, in 2012, his MSc degree in Electronics and Telecommunications from Athens National University, in 1993, and his PhD degree in Physics Didactics and Educational Technology, from Athens National University, in 2013. He is now Assistant Director at a high school and a part-time Lecturer at the School of Pedagogical & Technological Education, Athens, Greece.

### **3.5. Teachers' pedagogical competence in primary school. Examining the classroom climate of schools using the comprehensive reformed curriculum**

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#### **Abstract**

*In 2010, the Greek Ministry of Education decided to introduce a new type of all-day schools, Schools with Comprehensive Reformed Curriculum (CRC) (Greek acronym: ΕΑΕΠ). This new proposal compared with traditional primary schools included several changes in the daily curriculum. Although the aforementioned scheme has not been sufficiently studied, it receives a strong criticism relating to specialist subject teachers' pedagogical competence. The purpose of this study is to examine the classroom climate of schools using the Comprehensive Reformed Curriculum comparing teachers and specialist subject teachers' (SST) teaching practices.*

**Key-words:** Classroom climate, pedagogical competence, pedagogical content knowledge, content knowledge, specialist subject teachers, comprehensive reformed curriculum

#### **1. Introduction**

Since the establishment of Greek national educational System and 1972, Primary Schools have been functioning under all-day curriculum. This form of functioning was gradually abandoned until the middle 80's. At that time, due to women employment, children had to stay at school more hours than they used to, so all day classrooms were functioning wherever necessary. In 1997, all-day schools were fully established in the Greek educational system and are still functioning referred as 'traditional all-day schools'.

A new type of all-day schools, which are called Schools with Comprehensive Reformed Curriculum (CRC), was established in 2010. The term CRC is used to describe the difference in traditional schools and traditional all-day schools, because this new scheme offers more non-academic courses in addition to academic courses, such as composite schools and comprehensive secondary schools which are functioning in other countries. This new scheme was initially implemented in 800 primary schools in order to be gradually adopted by every school of primary educational level (Thoidis & Chaniotakis, 2012).

This new proposal about primary schools compared with traditional primary schools, includes several changes in daily curriculum, such as extended school time, an enriched program with new teaching subjects and activities, and the inclusion of SST. SST are those who are specialized in a specific learning subject, such as music teachers, foreign language teacher, ICT teachers, physical educators, art teachers, drama teachers etc. SST also work in traditional primary schools less hours in the daily curriculum compared to schools with CRC. The table bellow shows the number of schools functioning under the CRC form 2010 to 2015.

**Table 1**  
*Schools Functioning under CRC*

Year	Schools with CRC
2010-2011	800
2011-2012	961
2013-2014	1318
2014-2015	1335

Although this new scheme has not been sufficiently studied, it receives a strong criticism. One of the reasons might be the lack of SST' pedagogical competence (Grollios & Liampas, 2012). SST graduate from universities that traditionally prepare secondary school teachers. SST' preparation is focused exclusively on the specific content knowledge of their respective discipline (i.e. music, ICT, literacy, etc). Preparation for pedagogical content knowledge seems to be substandard and insufficient (Kassotakis, 2010), despite the fact that both of these factors are crucial for the quality of teaching and student understanding (Buchmann, 1982, 1983; Doyle, 1986; Feiman-Nemser & Buchmann, 1987; Tobin & Garnett, 1988, in Cochran, King, & DeRuiter, 1991).

## **2. Classroom climate and pedagogical content knowledge**

Classroom climate is a subset of school climate formed within the classroom environment (Arter, 1987). The need for pedagogical competence is a factor that undeniably assists teachers to create a proper classroom climate. This ability which is referred as Pedagogical Content Knowledge (PCK) is described as an intersection of subject knowledge and pedagogical knowledge (Shulman, 1987). It is obvious that PCK is an ability that assists teachers in classroom management, which is one of the key factors in creating a classroom climate which leads to higher order thinking and learning (Choy, Wong, Lim, Kam, & Chong, 2013).

According to Kassotakis (2010), subject knowledge is a crucial factor in teaching process. Although the idea that subject knowledge -and only subject knowledge- is sufficient enough to allow someone to teach, it is a delusion. PCK is that form of knowledge that makes teachers 'teachers' rather than subject area experts (Gudmundsdottir, 1987, in: Cochran, 1991 p. 6).

What is unique about the teaching process is that it requires teachers to "transform" their subject matter knowledge for the purpose of teaching (Shulman, 1986). This ability is crucial for the quality of teaching, while, as it has already been mentioned, SST' preparation for PCK during their initial training in Greek University departments seems to be substandard.

## **3. Method**

### **3.1. Focus of the study**

Therefore, the focus of this study was to examine the classroom climate of schools using the CRC, comparing teachers and SST' teaching practices, as well as their perceptions about their pedagogical competence.

### **3.2. Sample, research instruments and content analysis**

The research, which was a case study, took place in a primary school that functions under the CRC. All teachers of the school have been involved (13 teachers and 6 SST). The research instruments chosen to collect data were the observation combined with semi-structured interviews. The observation process included 38 hours (2 hours per participant). Personal semi-structured interviews took place to examine the participants' perceptions about their pedagogical competence. Due to the limited number of participants, we are not able to generalize our findings, which is the limitation of the present research.

### **3.3. Observation**

The observation method has been chosen to examine 16 observation factors (8 pedagogical, 8 authoritarian, using the research tool of Konstantinou, 2001) in order to record:

- a) Rate of pedagogical and authoritarian teaching practices
- b) How teachers treat students (e.g., respect, insults etc)
- c) Practices that constitute disciplinary actions (e.g., punishments etc)
- d) Practices associated with the way communication and teaching are formed in classroom (e.g., rate of students' autonomy etc)

### **3.4. Interviews**

During interviews, we tried to examine the participants' perceptions about their pedagogical competence and the correlation between pedagogical competence and classroom climate. The main research question was whether the lack of SST' pedagogical competence had an impact on classroom climate).

## **4. Results**

### **4.1. Observation findings**

The table below shows all teachers' recorded practices (presenting percentages). It seems that pedagogical practices are more often than authoritarian practices.

Table 2  
*Overall Teaching Practices*

	Pedagogical practices	Authoritarian practices
Recorded	1973	823
%	70,56%	29,43%

The table below compares teachers' practices and SST' practices. In fact, there aren't any substantial differences between both the participant groups contradicting the argument of the lack of SST' pedagogical competence. The most common practices of all participants seem to be more pedagogical than authoritarian. The most common authoritarian practices seem to be associated with the way communication is formed in classroom.

**Table 3**  
*Comparison between Teachers' Practices and SST' Practices*

	Pedagogical practices	Authoritarian practices
Teachers (rec.)	1432	593
SST(rec.)	541	230
Teachers (%)	70,71%	29,29%
SST (%)	70,17%	29,83%

However, as the table below shows, there are many qualitative differences in the authoritarian practices that both of the participant groups use. It is obvious that SST use authoritarian practices more often relating to disciplinary control, detentions or punishments; these differences seem to be statistically significant. A slight difference was noted in student manipulation, while the indirect monologue seems to be a traditional authoritarian practice of teachers. Indirect monologue shows a lower rate in SST' authoritarian practices mainly due to their subject content, which are more liberating and pleasant and do not follow a regulatory procedure, such as the traditional curriculum subjects.

**Table 4**  
*Teachers' and SST' Authoritarian Practices*

	Teachers	SST
Indirect monologue	41,48%	28,26%
Disciplinary control	19,73%	31,30%
Detention enforcement	9,78%	16,52%
Students' manipulation	7,25%	11,30%

#### **4.2. Overall interview results**

As regards the interviews' overall results:

##### *4.2.1. SST' teaching competence*

- 10 out of 13 teachers stated that SST are not able to teach because of their lack of pedagogical competence.
- 2 out of 13 teachers claimed that SST are capable of teaching.
- 1 teacher claimed that this is a generalized notion and every SST should be examined as a different case.
- All teachers agreed that education in pedagogical content should be a compulsory subject during initial training of pre-service teachers
- Almost all (5 out of 6) of the SST acknowledged their lack of pedagogical competence compared to teachers. They also believe that they should have a more

effective pre-service training concerning their pedagogical competence and strongly recommend that this training should take place during their initial studies.

#### *4.2.2 SST' pedagogical competence*

Regarding SST' lack of pedagogical competence, teachers stated that SST are insufficiently prepared concerning the pedagogical content. Some of their statements were the following (T: means teacher and SST: means specialist subject teacher):

##### *Teachers' opinion:*

- “They have a deep content knowledge, but they are not educated in Pedagogical content knowledge.” (T8)
- “They are insufficiently prepared concerning the pedagogical content. They consider the matter of discipline, as more important than it should be, while children are waiting these special subjects to be more liberating than main subjects.” (T6)
- “They are sometimes yelling, they are incapable of enforcing behavior control on pupils. They used to suspend children by expelling them from classroom, which is unacceptable.” (T12)
- “They are incapable of maintaining a calm and orderly atmosphere in classroom.” (T3)
- “I believe that education in pedagogical content should be a compulsory subject during initial training of pre-service teachers, including primary and secondary teachers as well.” (T2)
- “Mathematicians, physicists etc, graduate from universities without getting any pedagogical knowledge. We shouldn't teach unless we have a pedagogical training during our studies. Pedagogical competence should be a key qualification for those about to teach.” (T6)
- “Pedagogical training should take place during studies and initial training.” (T8)
- “In addition to pedagogical content training, practical exercise should be necessary.” (T19)

##### *SST' opinion:*

- “We were on uncharted waters, all alone [...]. My suggestion is to integrate pedagogical content training to our initial training in University”. (SST4)
- “There wasn't a sufficient preparation on pedagogical content knowledge in our initial training, although it should”. (SST5)
- “We should have been educated in Pedagogical content knowledge, because now we are trying to manage this situation on our own, or by getting help from more experienced teacher colleagues [...] We have to learn how to treat younger children, to gain a pedagogical competence”. (SST17)

## **5. Discussion**

The study indicated that there aren't any substantial differences between teachers' and SST' teaching practices. The most common practices of all participants were more pedagogical than authoritarian. Focusing on qualitative differences between authoritarian practices that both groups use, it seems that SST use authoritarian practices relating to disciplinary control more often. This probably occurs due to their lack of pedagogical competence, which all of the SST involved in this study seem to acknowledge. Furthermore, SST work in over one school, which brings more difficulties in classroom management competence (more children with different needs-

fewer hours dealing with every classroom than the main teacher- fragmented and unsuccessful efforts to create a proper classroom climate).

Almost all of the participants agreed that pedagogical competence depends on an initial pedagogical training program which should take place during studies combined with practical exercise. This proposal should be taken into consideration and should be treated as an urgent and undeniable need on behalf of Greek educational authorities in order to abrogate the Greek context paradox, where teachers are able to teach without having any pedagogical training and make a change in paradigm.

## 6. Conclusion

Pedagogical competence should be a key qualification for those about to teach. Expert teachers are not born with PCK (Kind, 2009); therefore, pedagogical content should be a compulsory subject during initial training of Greek pre-service teachers, including primary and secondary teachers as well. Pedagogical knowledge shouldn't be separated from practice, as it has been found that didactic components separated from their framework are not effective in teacher education (Wideen, Mayer-Smith, & Moon, 1998, in: Emmer & Stough, 2001). Pre-service teachers' initial training should provide a link between theoretical courses and field experiences on a practical exercise level. It is, therefore, necessary to establish teacher education programs that combine subject knowledge and pedagogical knowledge preparation or improve the existing ones in order to link the aforementioned contents and theoretical courses to field teaching experiences. Furthermore, ongoing pedagogical content training and update of existing pedagogical content knowledge should be established for all in-service teachers and SST.

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## *4. Early Childhood Education*

## **4.1. Supporting early childhood teachers in Science Education: Processes and outcomes**

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### **Abstract**

*This study aimed to explore the processes and outcomes of an one-year university – teacher collaboration to support an inquiry and science skills based educational process for young children. This study is part of the research project “Science Teacher Education” (STED) and focuses on the description and understanding of the gradual shifts observed in teacher knowledge, thinking and practice regarding teaching science in early childhood education. The changes recorded after their professional support were related mainly to their theoretical awareness, inquiry based educational practice and teacher autonomy.*

**Key-words:** Science Education, teacher education, early childhood education, professional learning

### **1. Introduction**

During the last decades, the emphasis on school science changed from a body of knowledge to be mastered to something more like the way science was actually made by scientists. In other words, the emphasis nowadays is on the learning of the scientific process and the skills that are part of producing science knowledge. The explicit instruction of skills integrated into scientific topics and the opportunities to implement the skills in different contexts are important and necessary for improving students' scientific literacy (Spektor-Levy, Eylon, & Scherz, 2009). There is some emphasis on scientific process skills in Greek Early Childhood Education (ECE) curricula. More specifically, in the current ECE curriculum there is not an explicit reference to scientific skills and their development. However, some of them (e.g., observation, classification, hypothesizing) are reported as a means to investigate or a way to know the world. The new “pilot” Greek ECE curriculum's section in science education refers to scientific skills (observing, collecting, recording, analyzing and interpreting data, measuring, testing hypothesis, predicting) as teaching strategies serving both the adoption of an investigative attitude to everyday experience and problems and an understanding of science as a social endeavor working under constant rules and procedures.

However, a gap between the proposed and the implemented curriculum has been observed in relevant research. ECE teachers give limited opportunities to children to develop scientific skills and be involved in scientific processes (Kallery & Psillos, 2002). More specifically, while ECE curriculum in Greece refers to teaching scientific

skills and processes in science education, it is often observed that ECE teachers adopt a traditional, transmissive model while organizing science activities with young children. In addition, an inconsistency has been observed between teacher beliefs and practices (Avgitidou, Papadopoulou, & Alexiou, 2015; Mansour, 2013). Research based on interviews with ECE teachers, followed by observations of their practice while organising science activities showed an inconsistency between their statements (close to current trends in Science Education, SE) and their practice (more traditional). In the study of Mansour (2013), for example, teachers thought of themselves as teaching in a child-centred way, while their practice is teacher directed, and do not seem to realize this inconsistency. However, developing scientific skills with young children is feasible (Gelman, Brenneman, Macdonald, & Moisés, 2010), while teachers need support to rethink and restructure their ways of organizing inquiry-based science activities with young children.

The main issue is, therefore, how to support teachers to rethink their own beliefs and practices and base new understandings and practices on a theoretical, research and reflective level. Research has shown that teachers cannot always realize their own assumptions behind their practice and rethink or re-examine them without support (Cranton, 1994; Mezirow, 1997). They need opportunities based on theoretical and methodological tools as well as discussion processes to examine their beliefs and assumptions, their choices and their consequences within a community of learners, and attain knowledge through this process to improve or modify their future action (Easton 2008; Frost, Durrant, Head, & Holder, 2010; Whitcomb, Borko, & Liston, 2009). Furthermore, professional learning is a continuous process of rethinking and re-examining institutional, practical and moral elements of teaching though research and reflection (Cochran – Smith & Lytle, 2009). For these reasons, the STED program involved group meetings, discussions of theory based on examples and workshops, diaries and reflective discussions to enhance participating ECE teachers' research, reflection and learning based on theoretical contexts and tools for self-awareness. In particular, the use of semi-structured diaries aimed to guide teachers' self-observation and their role as teacher-researchers. The process of sharing experience in frequent group meetings based on a documentation and interpretation process of what happened assisted each ECE teacher to interpret the specific event based on dialogue and different perspectives of what SE in ECE is all about. Furthermore, through the use of documentation from interviews with children prior and after the implementation of SE activities, ECE teachers were able to critically examine their way of teaching science and the learning outcomes of their activities. The main issue throughout the program was to encourage teachers' autonomy in designing teaching learning sequences (TLS) based on current theoretical principles. Therefore, the aim of this study is to explore if a systematic, one year educational program based on a dual model that of the teacher as a researcher, reflective practitioner and designer could support ECE teachers to improve or amend their existing beliefs and practices regarding science education.

The research questions of this study are:

1. What are participating teachers' initial beliefs and practices about SE?
2. What are the obstacles in adopting current trends in SE in teaching science to young children?
3. How teachers' professional support may affect or amend their existing beliefs and practices regarding science education?

## **2. The research context and methodology**

The STED developed as a university – teacher partnership. Two researchers and five ECE teachers acted as active researchers and reflective practitioners collaborated in this developmental project, all shaping the process of STED actively. The program had three phases (figure 1). During the first phase on, teachers' initial views, practices and needs were recorded when designing and implementing science teaching. Additionally, a TLS was prepared by the researchers in order to help teachers have an example of instructional design in SE in a practical way. In the second phase, teachers were educated in the TLS mentioned before. More specifically, teachers in collaboration with researchers studied and refined the respective TLS, before they implemented it in their class. In the third phase, teachers designed, developed, implemented and evaluated their own TLS by having researchers' support during all their activities.

Methods adopted in the study included individual teacher interviews in the beginning, process and end of the project to record their initial beliefs and possible changes during the course of the program. It also involved observations of teaching based on an observation sheet developed on axis representing current trends in SE theory and practice (e.g., didactical transformation, children's alternative conceptions, inquiry into teaching activities, verbatim interactions, ICT use). Diaries were kept by each teacher regarding their thoughts prior to teaching referring to their selected design and after their teaching referring to a description, evaluation of what happened and suggestions of alternative proposals for actions.

The interviews and diaries were analysed based on the qualitative analysis of Miles and Huberman (1984). Regarding changes in ECE teachers' practices, we used a representative and "holistic"/general indicator which was the model of science teaching to describe them. Namely, at the end of each observation, researchers described teaching under three different models: First, a traditional model within which the ECE teacher wished to transfer knowledge by explaining children a natural phenomenon or demonstrating experiments. In this case, the teacher asked questions seeking to explore children's understanding after teaching and their ability to use this knowledge in a given activity. Secondly, an inquiry-based model giving emphasis on children's exploration and participation in knowledge construction. The second model was divided in three different descriptions of inquiry: 2a) exploratory demonstration of experiments within which teachers conducted the experiment but children participated by answering teachers' questions, 2b) guided group or individual exploration within which children worked with a given observation sheet and were guided by the teacher to solve a specific problem and follow a specific process to participate in an experiment and 2c) open inquiry where children constructed problems or questions and designed an experiment to answer them. Thirdly, the constructive model, which is based on an exploration of children's alternative ideas for science concepts or phenomena and a specific process of trying out, checking their understandings, introducing new knowledge, implementing new knowledge to a new situation and proceeding to metacognitive understanding. As different numbers of teaching phases recorded for each teacher (and, thus, different numbers of descriptions of teaching models), we decided to calculate percentages in order to have the possibility of comparisons concerning teachers' practices among the phases. Finally, data from interviews, diaries and observation sheets were triangulated to show relations between teachers' knowledge and understanding and their selected practices.

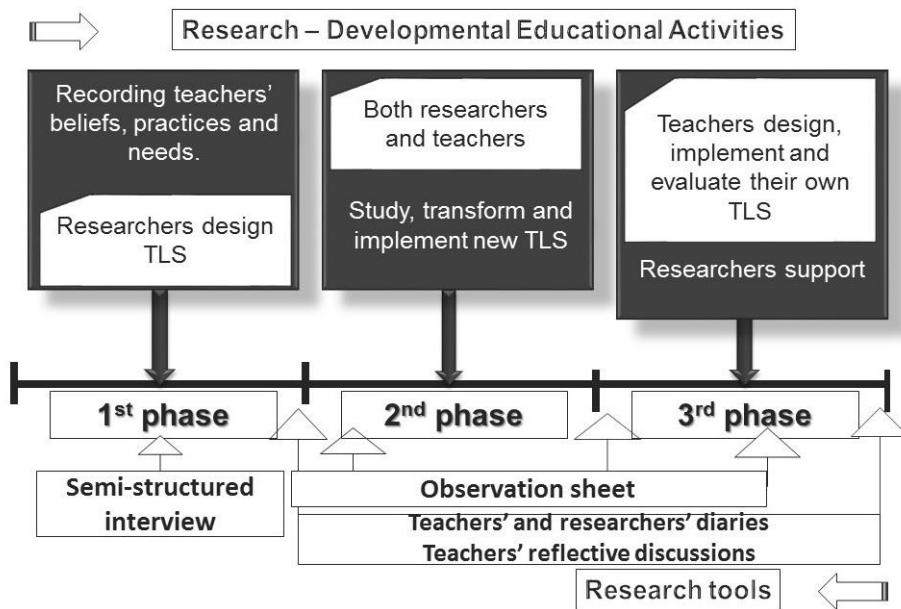


Figure 1: The outline of STED project.

### 3. Results

#### 3.1. Initial beliefs and practices

It was evident from their initial interviews that ECE teachers put a special emphasis on the acquisition of procedural knowledge by children. However, an inconsistency between teachers' goals and children's expected actions was found, since in many cases teachers did not describe how they put their goals in action. For example, they did not describe how they encouraged children to co-operate in experimentation or make questions, how they supported children's observation and also how they assisted children in drawing conclusions or searching for solutions. The most frequently stated evaluation criteria had a normative and transmissive focus, such as children's response to teacher directed activity, remembering the content and attainment of teaching goals.

This inconsistency revealed the possibility that ECE teachers were not aware of the meaning of procedural knowledge and scientific skills and how to encourage their development. It is interesting that at the end of the first phase in the reflective discussion with teachers, teachers acknowledged this discrepancy between researchers' and teachers' understanding of terms, such as procedural knowledge. Even after teachers' theoretical support during the first phase of the project based on examples from practice, teachers said that it was difficult to utilize terms, such as procedural knowledge in practice. This showed that theoretical awareness does not stem from simple listening to or studying the theoretical principles but continuous efforts to apply and rethink these theoretical principles in practice having relevant support. In other words, theoretical awareness requires time, continuous effort at applying/testing theory to practice and guidance. Teachers also acknowledged in their reflective interview at the end of the first phase that their understanding of theory assisted their reflection in action.

*"I had to study what procedural knowledge is, I searched to understand what it is".*

*"I tried to understand how you mean inquiry and how we mean it".*

*«These (the questions in the diary) we haven't learnt them in this way. It is something new, I comprehend it as an adult but I do not know how you mean it inside the classroom. This made it difficult for me in the diaries. If I knew what each one of these*

(terms) meant, I would give attention to them during my teaching. What you are asking (from us) I search to learn so I can apply them in practice. Because I perceive this as a term but it was difficult for me to understand it in practice”.

### 3.2. Gradual changes from the first to the third phase

The qualitative analysis also showed a discrepancy between theoretical awareness in the first and third phase, which was evident in changes concerning teachers' understanding of the main theoretical principles that determined the content of reflection. For example, during the first phase, teachers' understanding of content transformation related to teachers' choices about the duration of activities, their sequence and the nature/use of materials. It was evident that understanding of content transformation during the first phase was far away from its actual scientific meaning. After teachers' theoretical and practical support through systematic discussions of documentation and understandings in a community of learning, it was evident in the third phase diaries that teachers understood the meaning of content transformation and related it to the process of selecting the scientific content based on different sources of information, simplifications or selections of content and terminology to adapt it to the children of their class.

To describe changes in teachers' practices we show changes in their adopted teaching model in each phase (figure 2). We present five diagrams for each one of the ECE teachers, within which each column represents a group of observations: the initial observation (O1, observation 1), observations during the second phase of the program (TLS1) and finally observations during the third phase of STED (TLS2). The categories of teaching models we recorded during the different phases are presented in different colours: the traditional model (presented in blue) and the inquiry-based teaching (IBT) model presented through the various shades of green in the diagrams. The darker shade of green shows the “openness” in the IBT model (as they appeared in the legend, figure 2).

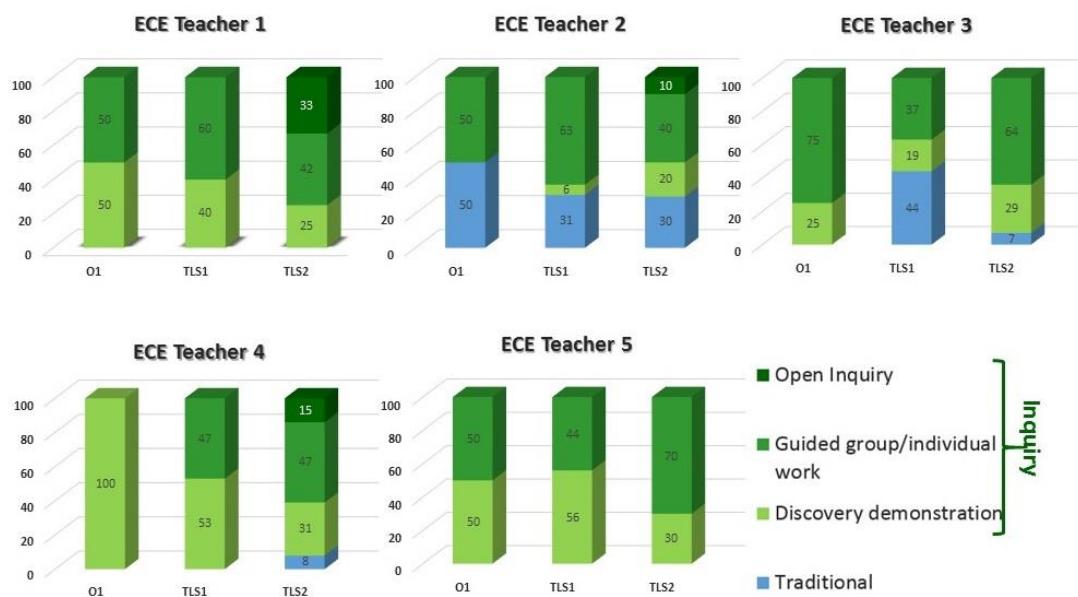


Figure 2: Changes in practice – The teaching model in science activities during the three STED phases (O1=initial record, TLS1=2<sup>nd</sup> phase, TLS2=3<sup>rd</sup> phase)

There were different starting points for all five teachers, with four of them being inquiry orientated from the start (the first column of each diagram). The second Teacher was equally traditional and inquiry oriented in her teaching. In four out of five teachers,

we recorded progress towards inquiry, as the percentage of IBT increased or movement was observed to more open forms of inquiry. An interesting case is that of the third teacher, as it seems to be a regress in the second phase, but an orientation to IBT in the third phase.

Finally, the process of documentation and reasoning of teaching encouraged by teachers' diaries enhanced teachers' critical reflection in relation to children's abilities and participation in learning as well as their repositioning concerning teachers' role in the classroom. This is evident in the reflective discussions with teachers. At the end of the first phase, one teacher said:

*"With what I did this time (in SE) I encounter children differently. Thus not so much (doing activities) with games but I have to give them something else for their mind to create and think actively other things. Because I did not tell them any of these things, thus to explain them what it is, they found them themselves through the video, the advertisement, the experiment...and I liked that, because we encounter children more serious now and I saw that children can respond to something like this, not all of the them off course..."*

Similarly, in the reflective discussion at the end of the second phase, a teacher mentioned the effect of inquiry based learning for children's overall learning by describing her observations of the outcomes of this "new" way of teaching science in relation to children's development.

*"It's very important for children to learn to make inquiry because I saw how children matured and how differently they work now, although they haven't started from a good level this year. How differently children approach anything from October till now. Even at the school yard I see how they think certain matters and are concerned, they get into the process of "why" all the time, something I did not expect. This means they have learnt this from all this process. I see how they make questions to one another..."*

#### **4. Conclusions**

The changes in ECE teachers' beliefs and practices regarding SE, recorded after their professional support, were related mainly to their theoretical awareness, educational practices and teachers' autonomy.

Theoretical awareness is gained through systematic opportunities to reflect, understand theoretical principles in practice, record and evaluate new teaching experience and be involved in a community of learners. Additionally, theoretical awareness is a necessary precondition for changing practice but it requires time, support and collaboration.

ECE teachers' educational practices in SE can be altered to enhance young children's systematic inquiry and scientific skills. This requires teachers' active involvement in their own professional learning through their roles as researchers, reflective practitioners, designers and members of a community of practice. ECE teachers' educational practices may vary regardless of the support, as they are related to initial teachers' profiles. However, in all cases, a change in practice was positively related to the aims of teacher education.

Finally, ECE teachers' autonomy is not taken for granted but gained gradually, as teachers develop theoretical awareness, research and reflection skills and co-operate with each other. Autonomy is proven by ECE teachers' ability to design, implement, record and evaluate TLS in science education. Further research on how theoretical

awareness, research and reflection skills and practice are related is important to design teacher education programs that can make a change in teachers' professional learning and SE in schools.

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## **4.2. Trainee teachers' collaborative and reflective practicum in kindergarten classrooms in Greece: A case study approach**

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### **Abstract**

*This chapter examines the reform outcome of reflective teaching introduced by the Department of Preschool Education among the teacher trainees in University of Crete during their practicum. The main purpose of this action research project was to identify principles and specific strategies to the development of collaborative work employed by the participants to support and enhance young children development and learning. The participants of the study (70 teacher trainees, and the University Kindergarten Mentor), were trained all together twice at the beginning of each semester by the Course Supervisor based on an adapted and modified model of 'Collaborative Learning Training'; the aim was to help teacher trainees: a) plan and teach, b) intervene in the learning environment of kindergarten, c) be involved in the formative evaluation of children, and d) change teaching practices using curriculum differentiation to respond to children's diversity. Data collection from interviews, surveys, observations and teacher trainees' portfolios showed the engagement of all the participants in a democratic, critical reflection and creative problem-solving procedure with favorable predictions for collaborative teaching and learning in future professional settings.*

**Key-words:** Early childhood education, teacher trainees, practicum, collaborative learning training, paired placement, learning continuity

### **1. Introduction**

Within the context of early childhood education, the trainees' role has changed towards the expectation that they work with their peers and mentors in a more reflective and collegial way (Hoover, 1994; Le Cornu & Ewing, 2008). One aspect of this research that has previously been undertaken is the advantage of paired trainee placements during the practicum (e.g., Hsu, 2005; Nokes, Bullough, REgan, Birrell, & Hansen, 2008; Numrich, 1996). Studies found out that paired placements enhanced trainees' learning opportunities during the practicum, especially through discussions on shared teaching and each other's observations. Peer placements tend to facilitate a richer learning context than individual placements (Turney, Eltis, Towler, & Wright, 1985). Trainees, also, tend to seek more support from peers (Beck & Kosnik, 2002), than mentors and supervisors. Others studies have indicated that collaboration in the form of peer coaching is effective in addressing isolation (Little, 1982) as well as helping teachers to apply new skills and strategies in their classroom (Joyce, Weil, & Showers, 1992; Reiman & Johnson, 2003). Additionally, various researchers have shown that peer coaching can promote collegiality and professionalism (Neubert & Binko, 1992; Wynn & Kromrey, 1999) and reflection amongst trainees (Vidmar, 2006; Wynn & Kromrey, 1999) and most importantly ensuring continuity in children's learning and development (Kwo, 2001).

### *1.1. Implementing a new model of collaborative training: a case study approach*

In the Early Childhood Department at Crete University in Rethymno, Greece, the practicum in the 4-year Teacher Education Programme has three levels. Each level involves two sessions of school experience across the first and second semester. This means that trainees will undertake one day of kindergarten classroom observation every week during the second year of the programme (Level I), one day solo teaching per week for eight weeks during the third year (Level II), and four weeks of 4 days per week of solo teaching during the fourth year (Level III).

Given the number of trainees in the programme, there is an insufficient number of cooperative kindergartens available to provide placements for trainees in Rethymno. This means that the university is obliged to allocate a group of four trainees to a kindergarten classroom requiring each of them to undertake solo teaching based on different themes according to the technical framework of the department's practicum. Consequently, this action led to concerns about how it could affect the continuity of children's learning. Therefore, to ensure continuity in the process of trainees' learning throughout the practicum, consideration was given to how trainees can provide valuable mutual support to one another.

## **2. Methodology, data collection and analysis**

### **2.1. Focus of research**

The main aims of the case study were to:

- a. Examine trainees' reflective teaching practice in the context of kindergarten teacher education whilst working in pairs within groups of four in kindergarten classrooms.
- b. Investigate the advantages and disadvantages of implementing this collaborative, training model and identify specific strategies employed by the trainees to support the continuity of young children's development and learning.

The study was pursued using qualitative research method in order to get an in-depth view of the issues (Glesne, 2006; Paton, 2002). Trustworthiness in triangulation of data (Glesne, 2006; Lincoln & Guba, 1985; Paton, 2002) was ensured by involving four data collection components: a) semi-structured interviews, b) surveys, using short answers and rating scales, c) non-participant observation and d) document review (trainees' portfolio's assessment). The inductive approach of grounded theory analysis (Glaser & Strauss, 1967) and deductive coding were used to analyse the data of trainees' self assessments, written reflections and logs all included in their portfolios. The constant comparative method generated both the focus categories and the reflective categories. The journal entries were coded based on Van Manen's (1977) levels of reflectivity to determine the reflection levels of the teacher trainees according to: a) Technical Rationality, b) Practical Action, and c) Critical Reflection.

### **2.2. Participants**

A cohort of 70 fourth-year early childhood trainees participated in the study. In completing their practicum trainees were paired within groups of 4 trainees whilst on practicum. In pairing trainees this was done on a free choice basis and groups of 4 trainees were allocated to 18 kindergarten classrooms (however, one classroom received only a pair of trainees).

### **2.3. Collaborative Learning Training Model**

The participants in this study received training as a cohort on collaborative working. This modified ‘Collaborative Learning’ training model aimed to help trainees develop a continuum of teaching practice as a tool for self-reflection, goal setting, and inquiry into practice through different techniques, such as exposition, discussion, demonstrations, guided discovery, and open inquiry. This continuum of teaching practice provided a common language about trainees’ teaching and learning in terms of:

- a) the planning and teaching of a theme in the kindergarten;
- b) the intervention of the learning environment of kindergarten classroom;
- c) the formative evaluation of children; and
- d) the change of teaching practices, using curriculum differentiation to respond to children’s diversity, including background to teamwork and working with peers, and tutorials designed for trainees to get to know each other.

## **3. Findings and discussion**

### **3.1. The peer support**

Based on rating scales transcripts we have conclude that trainees before the beginning of the project understand peer support as communication (100%, n=70), co-operation (100%, n=70), listening (38,58%, n=27), constructive criticism (71,42%, n=59), compromise (15,71%, n=11), organization (88,57%, n=62) and accepting help and ideas (70%, n=49) between them. After the project advantages of working in pairs were listed as: moral support (94,29%, n=66), able to share ideas, thoughts and feelings (95,71%, n=67), share the workload (67,14%, n=47), learn from one another (90%, n=63), and get feedback (75,1%, n=53).

On the other hand, trainees reported some difficulties working in peer groups as: ‘finding time for collaboration’ (12, 85%, n=9); ‘a lot of work (especially for the construction of portfolio)’ (32,85%, n=23); ‘personal differences, such as the trainees’ teaching style and the economical level’ (8,57%, n=6); ‘conflicting ideas’ (7,14%, n=5); and ‘being compared to another’ (4,28%, n=3).

The most effective collaborative strategies used by trainees during the practicum were: the common interventions, and conversations (98,57%, n=69); followed by the frequent meetings (95,71%, n=67), the searching of instructional materials resource (94,28%, n=66); the reflective portfolio with shared observations (87,1%, n=61), the development of critical friendships (77,1%, n=54), the team planning (68,57%, n=48), and the teaching and modelling (55,71%, n=39).

### **3.2. The continuity of children’s learning**

The current study has categorised the focus of the teacher trainees’ reflections into self, children, teaching, school, supervision, learning and preparation, concurred with previous studies (Loughran,1996; Subramanian, 1997).

Further categorisation of the reflective entries in trainees’ portfolios revealed that trainees were capable of describing and analysing personal feelings, concerns, situations, experiences and problems, findings in close agreement with other studies (Surbeck, Han, & Moyer, 1991). The trainees were also able to suggest ways on how to change or improve their personal characteristics, their teaching methods or activities and children’s behaviours or attitudes. They demonstrated abilities to analyse situations and experiences as the ‘comparative elaboration’ sub-category (Surbeck et al., 1991).

Portfolio’s content analysis showed that the majority of trainees succeeded in improving the coherency and continuity of the curriculum, planning and teaching using

an uninterrupted flow of ideas and /or information; by doing so they ensured continuity in children's learning achieved through:

- a) setting aims and learning outcomes or objectives (85,7, n=60);
- b) thinking about the structure of the session and timing of activities (98,57%, n=69);
- c) taking decision on the best teaching and learning methods to achieve the learning outcome (91,4%, n=64);
- d) listing content and key subthemes and undertaking more research if needed (90%, n=63);
- e) improving the lesson plan (75,71%, n=53);
- f) identifying the learning resources and support material (92,85%, n=65);
- g) finalising any linked assessment or evaluation (97,1%, n=68).

The trainees' speech organised, foreshadowed, summarised, and connected classroom tasks, ideas, and practices to assist their children in "keeping track of the multi-layered nature of classroom activity and work" (Leinhardt & Steele, 2005, p. 92).

Based on the philosophical foundations of "Project Approach" work reside in Progressive education, in particular, in the work of Dewey (1938), trainees planned a theme (and not a topic) with the intention to connect children's everyday home and school experiences leading to an ever-widening and reflective understanding of the new teaching concept.

At the level of classroom organization and management, trainees provided a caring classroom community that emphasized strong interpersonal relationships with their young children to form a functional and cohesive environment for all learners, displayed a helpful nature, showed respect for all children's well-being, offered help with class work, and encouraged a cooperative classroom community, thus, minimizing potential misbehaviour issues.

Observation notes by the lesson supervisor documented that trainees considered not only ways to diminish misconduct, but emphasized a strong trainee-child relationship as one of the most important factors to create and foster a caring classroom, responding to all children needs (Nie & Lau, 2009; Stein, 2010).

In the construction and management of supportive materials trainees used a repertoire of sources produced by individual trainees themselves, the Web, the interpersonal resources, the libraries, the observation and the museum exhibitions. The information sources used for the lesson plan were of a broad scope comprising both documentary and interpersonal sources, various media and content, such as fiction, personal and educational.

Concerning the teaching approach, the trainees applied the project curriculum, as a continuous spiral, relying on current activities as a 'moving force' toward new and more rigorous inquiries and interests, according to Dewey's theory (1938) about continuity and experience (McAninch, 2000).

In the case of children with learning difficulties as for the linguistically and culturally diverse children, trainees used the 'Classroom Support Plan', which was made by the course supervisor, incorporating the simple, informal problem-solving approaches to support their needs. This intensive teaching support included more focused circle time or small group activities or individual interventions. The support also included the adaptation of learning environment and/or further differentiation of the curriculum, monitoring of children's response over time, children's engagement and, finally, a simple written record of what has been done.

Concerning children's observation and assessment, all the trainees developed ways to plan, interact, monitor, document, assess and reflect about children's progress. The majority of them (43,4%, n=62) interpreted the documented evidence of children's

learning with their group peers and together made judgements for decisions that informed the next trainee's teaching. This meant that the next trainee considered the decision-making judgements and integrated them in his/her planning. When the first circle of teaching was complete, all trainees reviewed the information collected about children's progress and made judgments about the level and the kind of support intervention that children needed on an individual basis. The judgements they made informed their moment-by-moment and day-to-day decisions about the learning environment, ways to work most effectively with peer groups, and interactions with children to promote learning. This enabled them to be responsive to children, along a continuum, to build connections between children's prior, current and future learning experiences in order to promote continuity of learning, as reported elsewhere (Gourgiotou, 2014).

### ***3.3. A community of learners***

The perceived benefits of peer placements and collaborative work for trainees through the "Collaborative Learning Training Model" included:

- the development of strong personal friendships
- a safe, respectful, less stressful and productive learning for trainees
- the sharing of responsibility
- the acquisition of creative problem solving abilities and
- the enhancing links with the local community, because the trainees were so happy and proud of their work that they wanted to show off to other people. As such, an exhibition was organized in the centre of the town voluntarily without funds and proved to be a great success.

Whilst all trainees acknowledged the benefits of being placed with other trainees at school, the collaborative training model did seem to place increased demands on the trainees' interpersonal reflection and dialogue skills. Forming a professional community requires teachers to engage in both intellectual and social "deep work" – new ways of thinking and reasoning collectively as well as new forms of interacting interpersonally (Grossman, Wineburg, & Woolworth, 2001).

Unfortunately, three groups of trainees had a negative practicum experience, because collaboration between them was not well structured, a feature which is also reported by previous studies (Graham, 2006).

According to the university kindergarten teacher, for most trainees, their initial worries about their classroom teacher dissipated once on practicum.

## **4. Conclusions - Recommendations**

The findings from this project have strengthened our conviction that collaborative working on practicum produces overall engagement in a democratic, critical manner and a creative problem-solving procedure, which will help them plan and organize future collaborative teaching and learning projects whether in schools or other organizations.

Teacher education programmes should be encouraged to both teach and model collaborative practices. Furthermore, thoughtful integrated courses of study must be created based on the collaboration of trainees, practitioners, and their tutors. Finally, it is necessary to develop trainee interdependence early in their preparation in order to combat the all too common sense of teacher isolation and foster the development of graduates who as professionals actively question, create, and implement policy.

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### **4.3. The teacher's role in the digital citizenship formation in kindergarten**

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#### **Abstract**

*Once children begin to visit the online world, it is necessary to do it safely and responsibly. The e-citizen is a functional point in everyone's life. This research aims to study how teachers organize the daily program including activities in a digital frame to cultivate and shape the children's views on the meaning of citizenship and how the notion of e-citizenship is formed. Previous research indicate that the use of ICT in education is a real faction, so the cultivation of the e-citizenship is an essential factor in education. The school staff should emphasize the cultivation of digital citizenship and proactively implement a plan for integrating the digital age. Students need a clear understanding of what it means to be a digital citizen. The data of the research were collected from the observation of 6 teachers in 6 classes of kindergarten paying attention to the ways of their teaching, how they develop the activities of the daily program and how they use the digital technology with the children. The outcomes of the research indicate that teachers did not use the digital frame because they did not have the necessary knowledge of use and handling. By contrast, children excelled in relation to the teachers because digital technology is part of their daily lives. A program of activities and guidelines have been proposed for teachers which aims to help them better consolidate the characteristics of the concept of digital citizenship and enable them to better manage their daily routine with concrete instructions and judge the suitability of the software. Nurturing and shaping the notion of digital citizen, children have better control and autonomy, which give them guarantees for tomorrow role as citizens.*

**Key-words:** Teacher education, digital citizenship, early childhood education

#### **1. Introduction**

Previous research indicated that the use of Information and Communication Technologies (ICT) in education is a real faction, so the cultivation of the e-citizenship is an essential factor in education. The school staff should emphasize the cultivation of digital citizenship and proactively implement a plan for integrating the digital age (Larson, Miller, & Ribble, 2010). Ribble (2007, 2012) has also created a method for explaining and teaching the elements of digital citizenship through three concepts: "Respect, education and protection" starting as early as kindergarten. Students need a clear understanding of what it means to be a digital citizen. Young children use ICT at a very young age, while many youths use a growing variety of devices and applications. If these devices and media are web-enabled, the children are, then, connected to a global interactive environment.

Internet safety, cyber safety and online safety are the common names for the educational response that has evolved to minimize risk and help keep children be safe when using ICT. This education often builds children's and young people's skills and knowledge, while informing and sometimes offering resources to parents and teachers.

Children in many countries are introduced to ICT as part of their early childhood education. In Greece, early childhood education provides it in public or private sector, ranging from highly structured organisations to loosely organised groups. The Ministry of Education promotes the use of ICT, including the Cybersafety in Education. An excellent place for early childhood centres to start the introduction of digital world into the learning environment is by installing softwares on computers used by children at schools. Prior to more in-depth activities, such as viewing episodes – character flashcards, puzzles, music, memory games and other resources, educators can encourage children's identification with the characters. Educators can help very young children build an understanding of what is their own 'special information', what the digital word 'trust' means and what 'trusted adults' they talk with about their online activities. These are the first steps essential for helping students understand privacy issues when online and help set the stage for the digital citizenship. As children use ICT at a young age, education resources are needed that adequately address young children's differences in the cognitive development, the amount of online experience and learning styles.

This research aims to study how teachers organize the daily program including activities in a digital frame in order to cultivate and shape the children's views on the meaning of citizenship and how the notion of e-citizenship is formed.

## **2. Method**

The data of the study were collected through the observation of 6 teachers in 6 classes of kindergarten focusing on the ways of their teaching, developing the activities of the daily program and using the digital technology with the children. The observations were categorized in order to have better analysis (Cohen, Manion, & Morrison, 2011). The data of the interview were analyzed through the content analysis method (Fairclough, 1995; Mayring, 2000; Stemler, 2001).

## **3. Results**

The kindergarten teachers believe that they primarily need to be trained in ICT and digital education. Also, the kindergarten teachers have not adequately attended a training program in ICT education. The categorization of observation reflects the reasons why the kindergarten teachers do not prefer to conduct formal school programs:

- a. They are not well informed about the complex process for the submission and approval of these programs,
- b. They are not properly trained for the role of a program coordinator,
- c. They are not willing to be under the obligation to present the final product of the program.

The kindergarten teachers need primarily to be trained in ICT education. Their training in digital education is considered to be insufficient, so more workshops and seminars are required to be organized.

The categorization of observation reflects the reasons why the kindergarten teachers have not adequately attended a training program in ICT education:

- a. The financial burden for attending a training program,
- b. The lack of leisure time,
- c. The lack of incentives for kindergarten teachers' professional development.

The categorization of observation reflects the reasons why the kindergarten teachers do not join the school partnerships at all:

- a. The additional time required for school partnerships,
- b. The lack of infrastructure for Internet services,
- c. The lack of teacher training in new technologies.

In almost all kindergartens there were plenty of secondary sources of learning/educational material, which was used or produced during the implementation of the School Program. More specifically, there were books, encyclopedias, leaflets, pupils' drawings and crafts, crafts materials, all types of paintings, many types of paper for painting, sketch blocks, dummies, movies and picture simulations for different things (e.g., for vegetables and fruit), plants and animals exhibits, models and maps. In almost all kindergartens there were plenty of primary sources of learning/educational material, which was used or produced during the implementation of the School Program. More specifically, there were tools, utensils and instruments used in everyday life at home or at school, fabrics and cloths, a variety of museum material, plants and flowers, pulses and in some cases fresh fruit and vegetables. In most kindergartens there was a lending library, a handy cloakroom, a computer, but there was no infrastructure to have Internet services; if there is an Internet connection, there is not the PC in the class!

#### **4. Conclusions**

It is obvious that to some extent there is a problem with the school premises and infrastructure concerning mainly the Internet services. This fact is also tested and verified by the evaluation of the data coming from our systematic observations. It is also obvious that the lack of Internet services and technological infrastructure in the kindergarten classrooms gives no possibility of entering into partnerships with schools of different districts or countries.

The kindergarten teachers use traditional teaching aids, such as cds, videos, and avoid modern teaching aids in conjunction with the Internet services. In all the surveys many kindergarten teachers state that there are the necessary teaching materials in classrooms, which they often use. However, most of them state that there are not satisfactory Internet services and are not trained to use them effectively. This is probably the reason why they do not enter into school partnerships during the implementation of a School Program.

Changes in socio-economic and cultural context (Giddens, 2001) indicate not only that children have different perceptions but also teachers need to be trained in a parallel framework changes. Since the concept of the citizen is transformed each time by changes at all levels (Oikonomou, 2004), it is preferable to have a continuous vigilance for better cultivation of the concept in school. Cultivating the sense of digital citizenship, children have better control and autonomy (Korsgaard, Walters, & Andersen 2001), information that gives them guarantees for their future role as citizens (Karalis & Balias, 2007; Larson & Miller, 2011). The results of the study indicated that children understand, participate and shape the entire context which (McDonough, 2005; McDonough & Feinberg, 2005) either by involving or excluding from it (Levinson, Schugurensky, & González, 2007).

## **5. Suggestions**

The prospects for improving the implementation of school programs in Greece in terms of digital citizenship, need special attention, while it is imperative to promote interdisciplinarity, the cooperation among various scientists and children participation (Wildemeersch, Stroobants, & Bron, 2005). In addition, special attention should be paid to teacher lifelong learning and training in ICT by the Ministry of Education and its Department in charge, as well as boosting teacher training and life-long learning.

The process of the submission and approval of European programs should be simple, so that more and more teachers can be involved. Most of the kindergarten teachers think they need further training in ICT education. There is a misunderstanding or even confusion concerning the meaning and the contents of the ICT education. Finally, issues concerning kindergarten teachers training in terms of the implementation of ICT should be further reconsidered and elaborated in order to have a better citizenship education and the cultivation of digital citizenship for children in schools.

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## *5. Information Communication Technologies*

## **5.1. Surveying Greek student teachers' Information and Communication Technology (ICT) skills and their perceptions of ICT in education**

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### **Abstract**

*The aim of this study was to examine prospective primary school teachers' Information and Communication Technology (ICT) skills, as well as their perceptions of the integration of ICT in teaching. Data were collected through the administration of questionnaires to 128 first-year student teachers from a Greek university. Results indicated that future teachers' attitude towards the integration of ICT in education was rather positive. However, their ICT skills were found to be poor in contradiction to their high self-rated ICT competence. Implications are discussed with respect to the appropriate model of ICT incorporation in an increasingly overloaded and demanding teacher education programme.*

**Key-words:** ICT skills, ICT literacy, teacher education, primary education

### **1. Introduction and theoretical background**

Over the past 20 years, it has become evident that ICT represents an indispensable component of the initial teacher education programme of studies. The nature and the form of ICT inclusion is variable across countries and dependent upon a range of factors, while many teacher preparation programmes are still struggling to achieve a balance between the pedagogical use of ICT tools and the development of ICT skills. Research indicates that technical proficiency is not sufficient for using ICT as a pedagogical tool, yet lack of ICT skills may impede the employment of technology in a learning context and inhibit classroom use of ICT (Eurydice, 2011). On the other hand, nearly all European and OECD countries have included ICT as an integral part of their secondary school curriculum, rendering the development of ICT skills a requirement and responsibility of compulsory education (Eurydice, 2004, 2011; OECD, 2005). Despite these initiatives, it appears that students' level of ICT competence is still considerably variable, while many may not be adequately fluent in ICT (Eurydice, 2011; OECD, 2005). This is, particularly, evident in countries, such as Greece, where

ICT integration in education is still a struggle and process under considerable development.

During the last decade and within the context of Greek education, various surveys have been conducted evaluating the familiarity of teachers with computers; their results seem to converge significantly. Drenoyianni's survey (2004) on prospective teachers' ICT skills revealed that first-year student teachers had significant shortcomings in basic knowledge about ICT and the use of word processing, spreadsheets, web browsing, and email. Similar are the findings of Parisi, Tselios and Komis (2010), who surveyed prospective early childhood teachers on web information searching strategies. According to the researchers, prospective early childhood teachers lacked the skills needed for applying appropriate web information searching strategies (use of appropriate keywords, logical operators, imports, etc.). The use of web by future early childhood teachers was also the subject of Berdousis' research (2012). The researcher noted that prospective early childhood teachers used the web for information searching, but had mistaken representations concerning distributed storage of information and lack of central control.

On the other hand, research results in terms of Greek teachers' proficiency in ICT seem ambivalent. The longitudinal study of Koustourakis and Panagiotakopoulos (2011) examined change in the familiarization of future early childhood teachers with ICT during their four-year university studies. With respect to the results, a decrease was observed in the number of participants who considered themselves to have little familiarization with ICT. As a result, the number of participants that considered their ICT skills adequate increased. Yet, their overall number remained low in comparison to the total number of student teachers. Furthermore, Nikolopoulou and Gialamas (2006) investigated prospective early childhood teachers' self-assessment of ICT use. Participants indicated high confidence in the use of a computer operating system and word processing, while they regarded themselves as less confident in the cases of internet use and spreadsheets.

Regarding the acquirement of ICT knowledge and skills, Palaigeorgiou, Siozos and Despotakis (2006) conducted a survey on first-year Informatics students. Participants pointed out that they had mainly obtained their knowledge concerning ICT through personal involvement and social network of friends and family rather than the formal courses offered within the educational system. Similarly, both prospective teachers of Drenoyianni's research (2004) and prospective early childhood teachers of Koustourakis and Panagiotakopoulos' (2011) research stated that their knowledge about ICT was a result of their personal effort or tutorial studies. Apparently, results, such as these, seem to raise concerns with respect to the effectiveness of secondary education ICT courses, which are aimed at providing students with adequate computer knowledge and developing pupils' ICT competence skills.

Regarding the attitudes and perceptions of prospective and in-service teachers towards ICT usefulness in the educational process, research results of Teo (2008) and Cheal, Geer and White (2012) indicate prospective teachers' positive attitude towards the integration of ICT into teaching. Similarly, future early childhood teachers that participated in Berdousis' research (2012) illustrated that internet can be utilized towards the direction of young students' cognitive and collaborative skill development and, therefore, expressed their intention to use it in the educational process in a variety of ways. Finally, Gialamas and Nikolopoulou (2010) compared the perceptions of pre-service and in-service early childhood teachers towards the integration of ICT in educational practice. They concluded that in-service teachers held in statistical terms a significantly more positive attitude towards the integration of ICT in educational

practice than pre-service teachers. According to the researchers, this finding is probably attributed to pre-service teachers' lack of teaching experience, which does not let them fully realize the benefits of ICT on behalf of students.

Within the framework of the above mentioned research, the study reported here aims at examining Greek student teachers' ICT skills, as well as their perceptions of the use of ICT during their entry to a primary teacher education programme offered by a Greek university.

## **2. Methodology**

Student teachers' skills and perceptions were surveyed through the administration of a questionnaire. 128 first-year undergraduate students enrolled at the School of Primary Education, Aristotle University of Thessaloniki, participated in the survey. The majority of the participants were female (89.1%, N = 114), while only 10.9% (N = 14) were male.

Data were collected during the second semester of the academic year 2013- 2014. The questionnaire used consisted of 17 questions, five of which collected students' background information, such as their gender, their self-rated ICT competence, the sources of their ICT skill acquirement, as well as their comments on school courses and their perceptions of the integration of ICT in teaching. The remaining 12 questions represented test items concerned basic ICT skills. These test items were mainly compiled using the current secondary education syllabi and textbooks and consisted of a range of questions grouped into five main categories: word processing, spreadsheets, presentation software, email use and information seeking. Questions were accompanied by screenshots of the above environments, to enable the participants to respond based on their practical experience rather than their memory.

A pilot study was conducted before the administration of the questionnaire, in which 11 first-year student teachers participated. Their comments, corrections and suggestions had provided valuable feedback and significantly contributed to the process of revising the final research tool in terms of both structure and content.

## **3. Results**

### ***3.1. Self-rated competence and performance***

The analysis of the data collected illustrated a rather gloomy picture with respect to ICT competence, as it revealed a discrepancy between students' self-reported competence and their performance on ICT test items. Student teachers seemed to be quite confident, as almost 50% reported themselves as good or average users of ICT and 47% perceived their level of ICT use as very good or excellent. Participants that considered their skills insufficient were very few (3.1%). Figure 1 displays the above mentioned results.

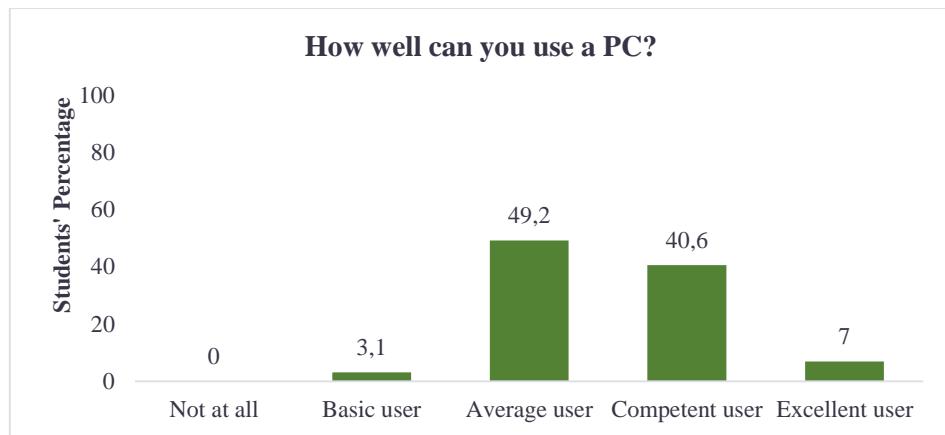


Figure 1: Students' self-rated competence.

Despite students' self-perceptions regarding their ICT skills, the average total score in the ICT test items administered was 22.46/40 (min= 5, max=37), indicating a moderate performance. Students' performance was far better in the cases of word processing and email use, particularly low in spreadsheets and the use of presentation software, and average on information seeking skills. Figure 2 indicates participants' average scores in each test category.

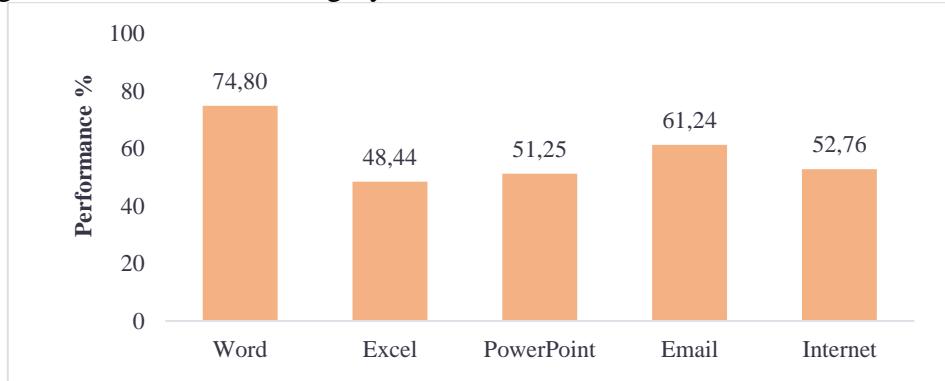


Figure 2: Student's percentage performance in each test category.

### 3.2. Sources of ICT skill acquirement

All students (100%) reported that they had attended ICT courses during their secondary school studies. However, 78% commented that their skills in ICT were acquired out of school. Personal involvement and private tutorial courses were reported as the main sources of ICT skill acquirement. Apparently, 76% of students characterized secondary ICT school courses as inadequate to prepare them, reporting negative remarks on the overwhelmingly theoretical content of the school courses and a variety of classroom management and course organization problems. Two indicative responses are reported below:

*"ICT subject focuses mainly on theory rather than practice".*

*"Absolutely not! (There is) insufficiency in the organization, resources and equipment of ICT courses, as well as (there are) unqualified teachers."*

Some of the students acknowledged the problems faced by secondary ICT courses and, therefore, proposed specific solutions. Suggestions, such as, increasing the teaching time dedicated to ICT, offering more relevant and practical courses, changing ICT teaching approaches and, finally, teaching ICT skills at university level, were perceived as some of the solutions.

In order to examine whether students' performance was related to the quantity of secondary ICT courses they had attended, an independent samples t-test was conducted. The assumption made was that more courses would lead to better performance. Yet, t-test results indicated no statistically significant differences ( $t=0.292$ ,  $df=126$ ,  $p=0.771$ ) between students who had only attended the compulsory ICT courses taught at middle school (Gymnasium) and students who had also attended the optional ICT courses taught at high school (Lyceum).

### **3.3. Perceptions of ICT integration in teaching**

Students' perceptions of the integration of ICT in teaching were rather positive, as almost everyone (97.62%) stated that ICT should be integrated into teaching. Nearly 80% of the participants considered integration a very important or fairly important process (shown in Figure 3).

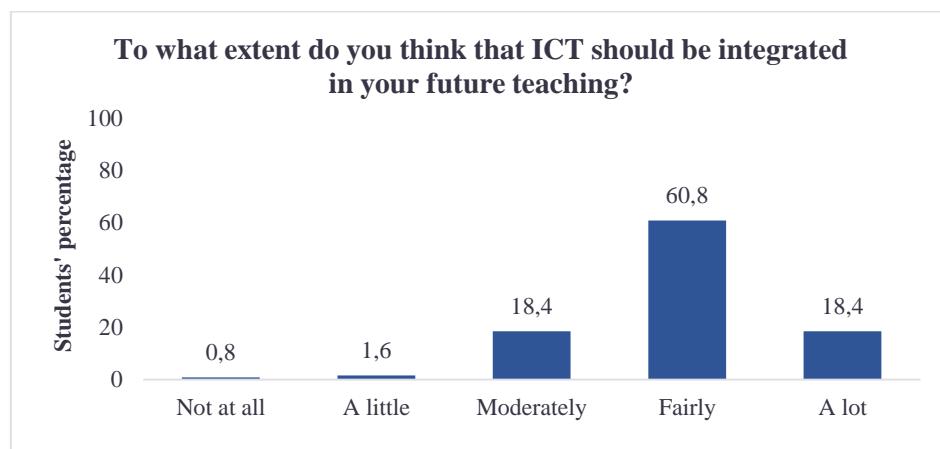


Figure 3: Students' perceptions of ICT integration in teaching practice.

In order to examine whether students' positive attitude towards the integration of ICT in teaching affected their test performance, another independent samples t-test was conducted. No statistically significant differences were found between participants who showed a positive attitude towards ICT integration and those who didn't consider integration important ( $t = -0.215$ ,  $df=124$ ,  $p= 0.830$ ).

## **4. Discussion**

With respect to the data analysis, participants' performance on the test items could be characterized as rather poor and could not predict successful ICT integration in their future teaching. Their moderate performance is in agreement with the results of relevant previous research focusing on Greek student teachers (Berdousis, 2012; Drenoyianni, 2004; Parisi, Tselios, & Komis, 2010). Little improvement was observed in the cases of word processing and email use, which has also been noticed in previous widely knowledgeable research (Eurydice, 2004, 2011; OECD, 2005). This small improvement may be attributed to the rapid integration of technology in everyday life, but may still be considered inadequate, as it does not correspond to the frequency and the pluralism of technology use nowadays. Apparently, the fact that the participants were not comfortable in web information seeking and evaluation was a rather unexpected and somehow worrying finding. Due to the extensive use of the Internet on a daily basis, this finding appears to raise urgent concerns related to the need for developing safe and responsible use of digital resources.

Although it can be concluded that future teachers lacked the necessary ICT skills that

would enable them to successfully integrate ICT in teaching practice, their confidence - as indicated through their self-assessment- was found to be high. This finding has also been illustrated in previous studies (Fisher, 2000; Koustourakis & Panagiotakopoulos, 2011; Lambert & Gong, 2010) and has usually been interpreted as an indicator of overall improvement of teachers' and educators' ICT skills. Unfortunately, this conclusion was not confirmed in this investigation, because despite the high self-rated competence, the actual ICT test performance of the participants remained low.

With respect to ICT skills' acquirement, the majority of the participants reported that this was obtained outside school. This finding, which is in alignment with previous research results (Drenoyianni, 2004; Koustourakis & Panagiotakopoulos, 2011; Palaigeorgiou, Siozos, & Despotakis, 2006), suggests the limited efficacy of ICT courses offered at secondary education level and illustrates the need to be revised so as to affect and develop students' basic digital literacy skills. A small percentage of the participants proposed that a possible solution towards the development of ICT skills is the provision of ICT skills' courses in higher education. According to such a suggestion, which appears to be supported by members of the research community, novice users should be facilitated in achieving a basic level of comfort in the use of technology per se through the provision of specialized undergraduate courses (Fisher, 2000; Gunter, 2001). Such an approach would probably entail a number of challenges for the increasingly overcrowded programme of studies of university departments and signify a redirection of focus from the pedagogical use of ICT to the teaching of basic ICT skills. Moreover, it should be noted that ICT skills are nowadays an essential asset for all people and in this respect it is not advisable to leave the mastery of necessary basic skills for all learners in higher education. Yet, the necessity of acquiring basic skills seems to be a prerequisite to develop ICT integration in education and, in turn, improve the use of ICT in compulsory education. In other words, the need for simultaneous development of ICT skills on the one hand, and the development of abilities in the pedagogical use of ICT on the other hand, is often suggested in the case of teacher education programmes. The corresponding strategies proposed involve the adoption of a mixed model approach, which would entail the development of teaching strategies through their application in a high-quality technological environment and provide authentic technological experiences to students (Gunter, 2001). Previous research has also documented undergraduate teachers' capability to correspond, even in their first year of study, to the demands of an increased difficulty programme that includes concurrently the development of computational skills and conceptual development related to pedagogy and content (Lambert & Gong, 2010). The positive attitude towards the integration of ICT by the participants in this particular survey is a hopeful sign towards this direction, as 98% of the sample considered the integration of ICT in education necessary. However, further study is needed on the issue, as several other questions remain to be addressed, especially those related to a formal and adequate evaluation of secondary education courses on ICT and the process of devising a balanced teacher education programme of studies enabling student teachers to acquire all skills necessary for the integration of ICT in teaching and learning.

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## **5.2. Distance teacher training in ICT: A case in Pilot Experimental Schools in Greece**

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### **Abstract**

*This paper discusses a teacher training program on new technologies in education delivered to professionals working in Experimental Schools around Greece; it presents the profile, goals, methodology and outcomes of the program aiming to become an alternative training proposal for educators interested in ICT use in the classroom. Set in an era of rapid Information Communication Technologies (ICT) development, common education policies among countries and a shift towards lifelong learning, this program addresses modern educators' needs, including the avoidance of professional downgrading, skills updating, professional and personal development whilst it provides an alternative to the lack of systematic teacher trainings provided by the State.*

**Key-words:** Training, distance learning, Experimental schools, new technologies

### **1. Introduction**

Technological advances, common policies, multiculturalism and global economy have all forced the need for lifelong learning to professionals who wish to remain competitive and up-to-date with the market demands. In this context, continuous training has become a demand for educators, too, as they have similar training needs to professionals in other fields, so as to avoid demotion, update their skills and advance their careers (Kelpanidis & Vrynioti, 2012). Participation needs and motives vary greatly from inner needs for self-realization and eagerness to acquiring knowledge to peer pressure, anticipated income raise and distinguished professional careers (Gkountouma, 2014). Simultaneously, beneficial outcomes of a teacher training program are expected for society, as teacher trainings are a step towards upgrading the quality of any education system (Pedagogical Institute of Greece, 2009).

However, in Greece there is a lack of systematic training of teaching professionals. The Pedagogical Institute (2009) focused on the following shortcomings: lack of continuity, consistency and feasible planning, overlap of responsibilities, ignorance of the actual needs, centralization, lack of credible training providers. Furthermore, deterrents, such as lack of free time, financial issues, limited information on available programs and admission to them, prohibit teacher participation in the limited programs available.

So, a distance teacher training program, available to teachers currently working in Greek primary and secondary education experimental schools, was designed, implemented and overall evaluated. Experimental schools provide advanced-quality innovative education, promote field-research in conjunction with Universities, provide

professional development to their educators, pilot school curricula etc. (FEK 118/24-05-2011).

This program provided opportunities to teachers to use ICT tools in classrooms, peer-collaborate in online environments, feel confident about using ICT and shift their attitude towards technology and teacher trainings. It was conducted in modules weekly and provided on the Open e-class platform. Participants asynchronously designed a variety of tasks, reaching weekly goals, which were uploaded on the platform and were available for all participants.

Participants were evaluated; initially, they filled-in a need and expectation on-line questionnaire. During the program, participants had to deliver weekly tasks and participate in forum discussions. By the end, a database of tasks had been created which remains available to all teachers for future use. Furthermore, an on-line questionnaire evaluating the entire program was available.

### ***1.1. Teacher development***

All people learn throughout their lives formally, non-formally and informally. Undoubtedly, however, it is important to obtain written recognition for acquiring new skills, as it certifies what has been conquered and provides feasible job seeking or career opportunities (Kelpanidis & Vrynioti, 2012). Moreover, continuous education contributes to personal and social skill development and promotes the quality of professionalism. The Pedagogical Institute (2009) also emphasizes continuous education as beneficial for the local communities, since people become confident and skilled in building meaningful relations and adopt a culture of collaboration.

Still, arguably, continuous education requires alertness, money and time. Time distribution between professional and personal life and money affordance deter people from participating in programs. Also, deterrents, such as course quality, admission requirements, limited availability, chaotic public service mechanisms significantly weigh in on the decision to abstain from continuous education.

This gap exists in ICT in education, as there are no free programs or seat availability is limited to teachers of specific subjects. Moreover, the technological skill gap increases in proportion to the participants' age, so many teachers experience frustration as they are not digitally literate and have hard times adjusting to the global context of the knowledge and information-based society.

### ***1.2. Distance training***

Technology massively changes our thoughts and actions whilst its integration in education has changed the educational process (Gkountouma & Kouklatzidou, 2013). In this century we realize that technology is in the center of critical thinking (Davis, 1999; Rutsky, 1999). ICT tools used in classrooms enhance young undergraduate students' learning; they are also used in school administration, databases, and in teacher development.

Distance education has contributed to overcoming deterrents commonly heard among teaching communities. Barriers, such as lack of free time, the inability to be physically present in a classroom, fees, and psychological barriers, such as low self-esteem (Gkountouma, 2014), are fairly bent in distance asynchronous programs, provided via Learning Management Systems (LMS).

The aforementioned distance training program employed an LMS; Open eclass, was supported by the Greek University Network. It is a learning environment based on open-source software philosophy. It embeds a series of technological tools, which support a multitude of tasks and e-course management (Severson, 2004). During the

summative evaluation of the program, participants affirmed their satisfaction regarding the platform's friendliness and functionality.

## 2. The program

Nowadays, new technologies are a dynamic part of teaching and school administration. Still, the available free ICT training programs for teachers (ICT Training, Level I & II) provided by the Greek Ministry of Education are either not offered anymore or address a limited number of teachers of specific subjects. Therefore, the teacher training program "ICT in Education I" was launched, after obtaining approval by education authorities.

The program was piloted in the school year 2013-2014 by 20 professionals of the 3<sup>rd</sup> Experimental Primary School, in Evosmos, Thessaloniki, Greece. During the next school year 2014-2015, after various improvements and customizing, the program was available in its second stage for 40 teachers of all subjects and levels of compulsory education working in Experimental Schools in Greece. In the third stage, 14 teachers working in the 3<sup>rd</sup> Experimental Primary School and 40 teachers working in typical public primary schools in Thessaloniki attended the program.

The program lasted 12 weeks, with a 4-5 hour work load per week for a mid ICT user. For beginners, counseling Skype-time was provided so as to avoid creating a multiple-speed group. The prerequisites of the program included basic ICT skills, owing a personal computer and an email account. All participants received a manual for Open eclass and the booklet "Best practices" in which the use of the platform, conduct code in forums, program requirements, etc. were thoroughly explained.

The program was implemented in *asynchronous* weekly modules via Open eclass. Participants were expected to attain the following cognitive goals: use the software required for each task, such as creating exercises, using timelines, exploring web 2.0 tools (written guidelines were provided for every software), design lesson plans embedding ICT tools, employ cognitive interaction and learning. Also, participants were expected to broaden their literacies: practice on ICT tools, work in virtual environments, participate in learning platforms and engage in on-line communities of practice, organize the time and resources available, collaborate in peer-projects and be experientially engaged in lively teaching practices. Moreover, participants were expected to adopt the following attitudes: acquire a positive attitude towards technology, embed technological means in their teaching, develop professionally in their own pace and place, realize that learning is not a static confined process. The purpose of the teacher training program was not to "teach" participants how to use ICT tools. The authors' aspiration was to provide their peers the opportunity to selectively use ICT in education by enabling them to create lesson plans and negotiable dynamic educational material under the scope of critical literacy.

The evaluation of the participants was conducted in various stages of the program. Initially, they had to fill in an on-line questionnaire exploring their needs, expectations, ICT and professional background. During the program every participant had to complete compulsory weekly tasks, whilst at the end of the program they had to fill in another questionnaire, evaluating key elements of the program, such as duration, format, kinds of activities, interaction, types of work (individual, peer, etc.) but also reflecting on their own role as *students*.

### 3. The participants' profile

In the second stage of this teacher training program, 43 individuals initially enrolled (35 females and 8 males) but 39 successfully completed the program (32 females and 7 males). All participants worked in public Experimental primary and secondary schools. Teaching subject distribution was great, including religion, Greek language teachers, mathematicians, French, English and German language teachers, painters, musicians, physical education, ICT and drama teachers, primary school and kindergarten teachers. Primary school teachers (42%) and English language teachers (11%) had the greatest representation.

Related to ICT skills, the majority of the participants (89,6%) had attended an elementary ICT course in the past (on MS Office) and had obtained the State Certificate of ICT, Level I. Due to aforementioned barriers, only 27,1% of the participants had attended the In-service Training of Teachers on ICT, Level II, provided by the Greek Ministry. Furthermore, quite interestingly, about 68,8% of the participants owned other technological gadgets, besides a computer. Also, most participants (87,5%) were highly interested in digital storytelling ICT tools, about 81,3% wanted to learn more about video and sound processing software, 77,1% were looking for creative ways of presenting projects, about half of them (47,9%) were in need of management tools (47,9%), whereas 31,3% were seeking advanced methods of searching information of the internet. Finally, almost everyone (95,8%) wanted to receive feedback and communicate with the trainers via emails, whereas most of them hesitated to write what puzzled them on the forum provided in Open eclass. Evidently, the forum was used for more general discussion on ICT tools, current education affairs, ideas, etc.

### 4. Motives of participation

The needs and expectations questionnaire revealed the motives of participation, as well. Evidently, the most significant motives of participation in this in-service teacher training program was the participants' personal interest, preoccupation with technology (94,7%) and their need for further professional development (78,9%).

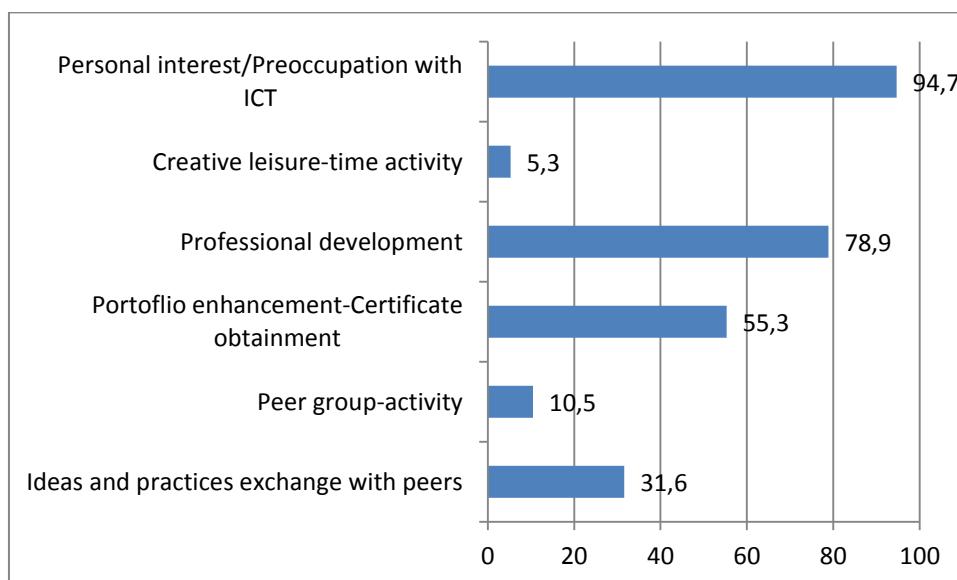


Figure 1: Motives of participation

About half of them aimed at enhancing their portfolio and curriculum vitae (55,3%) or acquiring an accredited certificate. Fewer participants were interested in exchanging

ideas and practices with peers (31,6%), though about 10,5% stated that they decided to participate in the program so as to attend a group activity with peers. Only 5,3% participated in order to spend their free time constructively, which is justified given the fact that most people nowadays do not have much free time.

## 5. Participants' preferences regarding the training

According to the answers in the questionnaire, most participants prefer attending trainings from October to December (71%), whilst fewer chose the period between January and March (16%) or April and June (13%). As this program, ICT in Education I, has a follow-up, ICT in Education II, half of the participants stated that they prefer attending the courses separately but within the same school year (47%), whilst a 34% preferred a merged 25-week course. Finally, about 19% of the participants would rather attend the 2 courses separately and in different school years. About half of the participants (53%) preferred blended learning, whereas the remaining 47% chose distance learning.

The program was 12 weeks long. The majority of the participants (63%) thought the duration was satisfactory, 26% considered it enough but 11% thought the program was short. Each module lasted 1 week, which for the majority of the participants (71%) was enough, for 26% it was enough and for 8% it was too short to complete the tasks.

The program was designed in weekly modules. Most of the participants (68%) thought that the tasks assigned to them each week were sufficient, 29% thought they were few and 3% complained that they were too many.

Regarding evaluation, 37% of the participants claimed they preferred weekly tasks. Still others, as shown in the following diagram, preferred other ways of evaluation. In particular, about 29% of them wanted shorter, easier tasks every week, 16% of them preferred quizzes and questionnaires, whereas another 16% wanted only one final assignment.

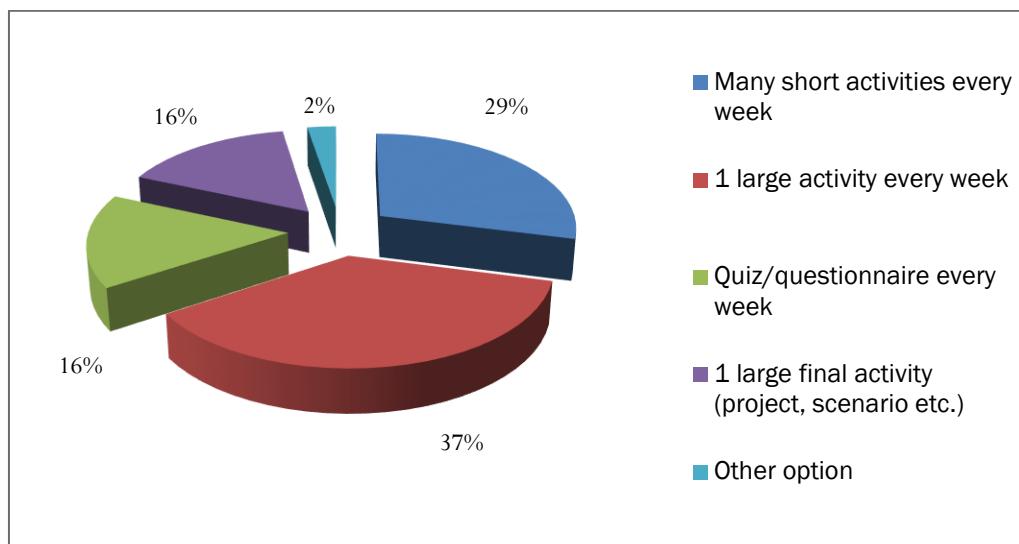


Figure 2: Preferences of evaluation

Finally, though participants were given multiple choices of task submission (on the platform, Google Drive, personal e-mail), most of them preferred to submit on Google Drive (78,9%) and on the platform (73,3%), probably because anyone could see them, which was also a form of work report.

## 6. Participants' opinions about the program

At the end of the program, participants were requested to evaluate the program. Regarding the communication and collaboration with the trainers, the majority of the participants (68%) claimed that it was fruitful and hoped for a long-term communication. Still, 24% thought it was satisfactory, whilst 8% considered it quite formal. In terms of peer-cooperation, the majority of the participants had a positive view (37% stated it was satisfactory and 26% fruitful), whilst 37% of the participants preferred a formal relationship.

Participants' expectations were partially met. 39% of them considered that the program was sufficient, 53% it was satisfactory and 8% it exceeded expectations. When asked whether they would be interested in participating on ICT in Education II, 94,7% stated they would enroll, whereas a 5,3% claimed they would think about it depending on their free time. It is significant that all participants were keen on pursuing further professional development; thus, ICT in Education II, after being piloted, will take place the following year.

The questionnaire also explored the participants' opinion regarding the usefulness of the tools presented throughout the program. The most useful tools were Google Drive (65,8%), iSpring (65,8%) and Prezi (63,2%) whereas the least useful ones were Voki (28,9%) and Slide Boom (31,6%). In the following graph, the participants' opinions about some of the tools included in the program are presented.

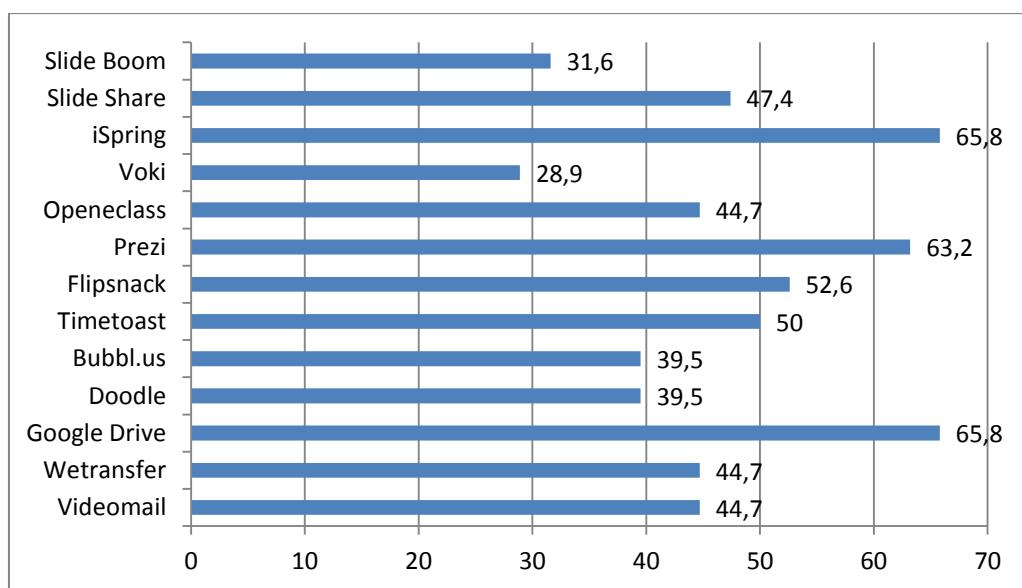


Figure 3: Participants' opinion regarding the usefulness of the tools

Regarding the level of easiness of each tool and software, participants considered Videomail (57,9%) and Wetransfer (52,6%) the easiest tools, whereas iSpring (7,9%) and Prezi (13,2%) were the hardest. The level of easiness is presented in the graph below:

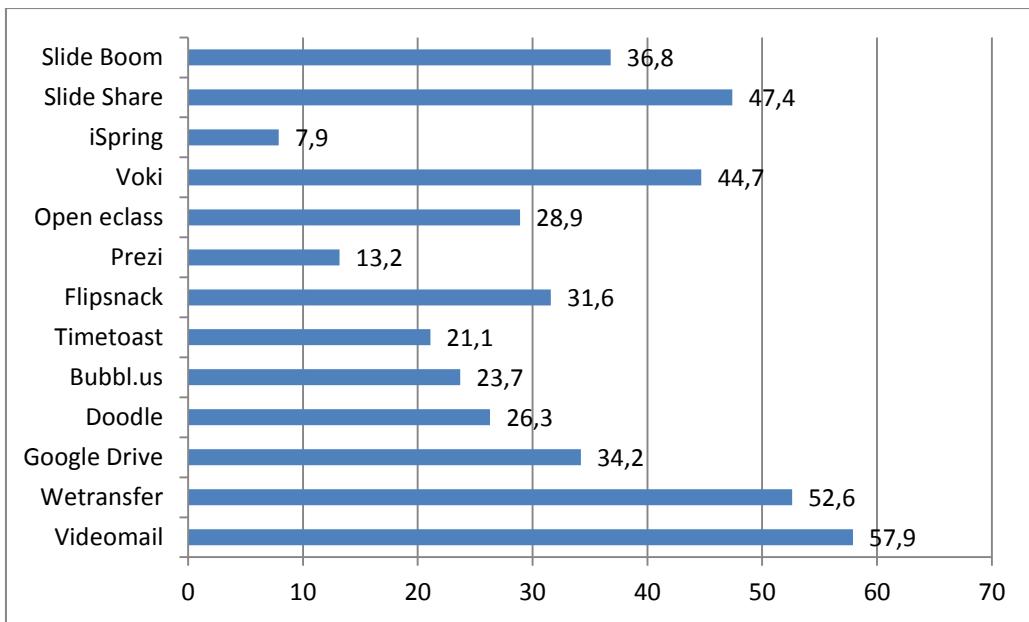


Figure 4: The level of easiness of each tool and software

Finally, among the various tools, participants claimed they would use Prezi (65,8%), Google Drive (57,9%) and Slide Share(55,3%) in a classroom, whereas they thought that Videomail (13,2%), Open eclass (18,4%) and Doodle (21,1%) would not be employed much.

In general, participants' feedback showed that they prefer working on a project in groups, which highlights the importance of communities of practice. Throughout the program some of them expressed fears and anxiety that they were old or ignorant to work with ICT, whilst some were hesitant to upload their work out of fear of their peer's judgment. Moreover, some participants expressed the need for spending more time on each tool and practicing in it even more, along with the need for greater variety of tools.

## 7. Conclusions

Within two school years, ICT in Education I was available to teachers working in Experimental primary and Secondary Schools around Greece and to teachers in typical schools of Thessaloniki. About 120 teachers were enrolled and all received an accredited certificate of attendance.

The need for ICT embedding in education, the great variety of tools available and contemporary pedagogical approaches have been among the incentives to design and implement this program. Its wide acceptance by a rather demanding audience of teachers working in Experimental Schools lead to the design and pilot implementation of ICT in Education II, which will run its second stage during the school year 2015-2016. Also, two e-books, including the material of the programs, have been published and are available on the authors' Academia Profiles.

In this paper, the distance teacher training program was presented as an alternative teacher training on ICT option that could massively meet any teacher's needs in any type of school in any place.

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### **5.3. WebQuests as a training technique of in-service teachers**

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#### **Abstract**

*The study concerns a proposal for the in-service teachers' training utilizing WebQuests' formula as an active training technique that develops research skills, stimulates self-determined learning, encourages collaboration and reflection, empowers teachers, and promotes their professional development. The theoretical context includes Mezirow's theory of Transformative Learning and the working methodology of WebQuests. A scheme of work on a specific theme is presented as a template of the training technique. Its aim is the development of teachers' skills to integrate ICT to teach concepts or themes via the WebQuest learning environment – namely, to learn about WebQuest teaching practices by WebQuestioning.*

**Key-words:** Training technique, in-service teachers, experiential learning, transformative learning, WebQuest structure, exemplar WebQuest template

#### **1. Introduction**

Teachers' training is one of the most significant parameters in educational policies internationally, because teachers are acknowledged as key mediators to achieve structural change and innovation in education. Because of the increasing demands placed upon teachers and the growing complexity of their roles, they need access to effective personal and professional support throughout their careers (European Council, 2014).

Attention has been paid to the effectiveness of training program conditions for continuous professional development (Psifidou, 2011). Researches provide evidence in favor of active techniques, such as discussions, teamwork, conducting case-studies, problem-solving, simulations, role-play, debate, which create optimal conditions for interaction and critical thinking (Illeris, 2009).

Teachers' training uses Information Communication Technologies (ICT) in many ways, for example, as a learning content, as tools for innovative teaching, as milieu for social interaction, as tools for distance learning.

Our study addresses the use of the WebQuest formula as an active technique for the training of in-service teachers. We propose an exemplary WebQuest as the training technique's template.

The theoretical context included principles of the transformative learning theory and the structure of WebQuest formula.

#### **2. Theoretical context**

##### **2.1. Transformative learning**

Mezirow and Taylor (2009) define transformative learning as the process by which we transform problematic frames of reference -habits of mind, meaning perspectives upon which our thoughts, feelings and actions are based- to make them more inclusive,

discriminating, open, reflective and emotionally susceptible to change. The major elements of transformative learning are critical reflection or critical self reflection on assumptions, nature and consequences of our habits of mind, and the participation in dialectical discourse to validate the best reflective judgment in a communication (communication learning). Also, it includes task-orienting learning that helps adults control the learning environment and improve performance (instrumental learning). Transformative learning theory is “a metacognitive epistemology of evidential (instrumental) and dialogical (communicative) reasoning” (Mezirow & Taylor, 2009, p. 102).

Transforming process begins when the educator raises a perspective, a disorienting dilemma, which contests a person’s habits of mind. Mezirow and Taylor (2009) noted that transformations often follow the following phases of meaning, which are not mandatory or absolute, but they have appeared in studies of the application of theory:

- self-examination with negative feelings (fear, anger, guilt)
- critical assessment of assumptions
- recognition that one’s discontent and the process of transformation are shared
- exploration of options for new roles/actions
- planning a course of action
- acquiring knowledge/skills for implementing one’s plans
- building competence and self-confidence in new roles
- reintegration into one’s life on the basis of conditions dictated by one’s new perspective (p. 103).

Teachers’ learning enhances when based on collaborative, active learning and feedback (Caena, 2011). The training approaches are grounded on practices, provide opportunities to reflect upon classroom experiences, modify aspects of the theories which dictate decisions-making (Timperley, Wilson, Barrar, & Fung, 2007), attend and administrate the emotional challenges associated with learning to teach (Olsen, 2012). Transformative educators stimulate self-determined learning by transferring authority to the learners. They are facilitators, change agents, guiding the process more than the content (Farmer, 2011). They encourage learner’s reflection, motivation, avoid giving too much information, create real-life contexts, encourage and promote social interaction, provide hands-on activities. Moreover, the development of basic skills (e.g., computer literacy) must be linked to practical experience and combined with social and emotional competencies.

## **2.2. WebQuest formula**

According to March (2003/2004) the WebQuest is:

A scaffolded learning structure that uses links to essential resources on the World Wide Web and an authentic task to motivate students’ investigation of a central, open-ended question, development of individual expertise and participation in a final group process that attempts to transform newly acquired information into a more sophisticated understanding (p. 42).

This definition reflects several sound pedagogical approaches, namely, inquiry-based, project-based, and content-based learning. It underscores the importance of the main theoretical and learner-centred subtleties embedded within the structure and format of the WebQuest model that include transformative learning, authenticity and meaningfulness, thematic instruction and situated learning, scaffolding, differentiation, cooperative learning, motivation, higher-order thinking skills, and metacognition (March, 2007).

Most WebQuests share the same clearly defined layout, which is usually structured in five vertebral sections:

- (a) Introduction: It is a short text that presents the assigned investigation, identifies the level the WebQuest activity is aimed at, and discusses the significance of the reasons why the topic is worth investigating. By explicitly providing important information on the topic it builds on learners' prior knowledge required to undertake the task (Teclehaimanot & Lamb, 2004) and effectively prepares and 'hooks' the learner for the lesson (Strickland & Nazzal, 2005).
- (b) Task: This section provides a focus on learners' energies and concretizes the designer's curricular intentions (Dodge, 2006). It is a brief and clear description in the form of an essential open-ended question of the expected end product and the skills required to complete it. Dodge (2002) describes 12 task formats to design engaging and challenging WebQuests.
- (c) Process: This is a detailed guide outlining the process that learners should go through to complete the task. A list of pre-selected by the teacher current, accurate, appropriate links to website resources minimizes unfocused web navigation. Resources could also include books, real objects, physical documents (Vidoni & Maddux, 2002). Learners are provided with scaffolded tools as a laid out timeline with deadlines for specific parts of the process, strategies for working together in a group, online dictionaries, advance organizers (flowcharts, summary tables, concept maps), a checklist of questions to analyze the information with, action plans that learners will have to make beforehand (Baylor, 2002; Cho & Jonassen, 2002; Teclehaimanot & Lamb, 2004). This section identifies and clearly defines roles and responsibilities for each member within a group (Allan & Street, 2007; Strickland & Nazzal, 2005). These roles must provide multiple perspectives from which to view the topic and must be interdependent fostering collaboration.
- (d) Evaluation<sup>1</sup>: This component clarifies the criteria related directly to the way both students' processes and final products will be evaluated. These criteria include contracts, checklists or rubrics (Teclehaimanot & Lamb, 2004). Self-assessment and peer evaluation are highly conducive to a better understanding of the learning process as they develop learners' higher order thinking skills and gradually result in their greater autonomy, self-regulation, and self-confidence.
- (e) Conclusion: This is a brief one-paragraph final statement that summarizes what the students have learned, inviting them to reflect on the process, results, and skills that they developed through the activities they undertook. Some higher level questions to be further researched or additional enrichment links may also be included to prompt students to extend their thinking and transfer their knowledge to other domains (Chatel & Nodel, 2002; March, 2003-2004). It may also be a time when the teacher gets feedback from students (Yoder, 1999).

### **3. The proposal**

#### ***3.1. Training's structure***

The WebQuest-based training is concrete, teacher-specific and requires involvement in a real problem. The educator<sup>2</sup> has to investigate the teachers' needs (what theme/skill they desire to learn about) and skills (e.g., competence in ICT and/or knowledge of foreign languages) in order to synthesize the working teams and choose the language of the online texts.

The training includes three parts, the cognitive and psychological preparation, the implementation of a WebQuest project prepared by the educator, and the teachers' self reflection on the transformation process.

Cognitive and psychological preparation could begin with a discussion in a team or plenary session on a “disorienting dilemma” concerning the theme/issue the teachers choose to be trained in and continue with the expression of their multiple perspectives. A self examination of the feelings about the issue is followed by a sharing of their assumptions, a critical examination of them and a raise of relevant questions.

Afterwards, the educator invites teachers to cooperatively explore new options/roles through a WebQuest project s/he has prepared. S/he chooses tasks relevant to teachers’ professional context, interests, needs and includes activities that concern firstly the investigation of elaboration on online or other kinds of resources and secondly the design of new educational material by the teachers to apply their newly obtained knowledge and skills. Because reflection on the process (knowledge and feelings) is an integral phase of meaning, during or after WebQuest’s completion, teachers could be encouraged to create and participate in horizontal (among peers) learning networks or learning communities writing entries in their logs or comment on a blog, sharing their work and articulating their new perspectives or feelings about the transformation process.

WebQuest-based seminars could address many training needs; WebQuests can be utilized either in a vocal, school context learning, or in a distance one (it does not require the educator’s physical presence, especially during the second and third part). Because of their open formula they can be used for the investigation of any theme/issue to enrich teachers’ innovative teaching practices in every discipline and promote learning-to-learn competencies. When combined with other web tools as sites, blogs, forum, chat, wikis, they promote teachers’ social interaction by creating communities of practice.

### **3.2. *WebQuest exemplar<sup>3</sup>***

WebQuest can be used as a learning content itself to train teachers in terms of WebQuests. Its aim could be to initiate teachers to the immense possibilities of the instructional tool of WebQuests, namely, the idea could be to use a WebQuest to train them how to use the WebQuests in classroom.

Following the transformation theory phases, the educator firstly raises multiple perspectives (“disorienting dilemma”) about the induction of Internet in the classroom; s/he invites the teachers to freely discuss their views about the need, advantages, benefits, and problems in pairs and a plenary session. Secondly, they proceed to the self-examination of their feelings about the Internet induction to share them and understand that possible negative feelings are acceptable. Thirdly, they explore a new teaching practice, the design of a WebQuest project.

Participants use a specially prepared by the educator Power Point template to:

- explore the structure and types of WebQuests by themselves,
- understand WebQuests’ function,
- acknowledge the utility and applicability of this tool,
- navigate web pages specially selected for their content and suitability for WebQuests,
- assess and reflect on them,
- create their own WebQuest on a topic of their interest based on the recently gained knowledge and assess it with defined criteria.

After the acknowledgement of the seminar’s goal, every pair/team works on their structured WebQuest independently. The basic task could be separated into three subtasks: (a) to discover the content and the structure of the WebQuests, (b) to study and assess a given WebQuest (a different one for each pair), and (c) to design their own

WebQuest on the theme and discipline of their choice. Every time they finish each subtask, they present their work to their colleagues (other teams) and get feedback.

Throughout this process the scaffolded tools embedded within the structure of WebQuests are: explanatory notes embedded in the notes space below each Power Point slide, a laid out timeline with deadlines for specific parts of the process (in the form of a clepsydra), advance organizers, such as summary tables, concept maps, a checklist of questions to analyze the information with, and worksheets (identification card, assessment criteria) specially designed by the educator to empower the teachers to effectively cope with the assigned tasks.

WebQuest content, particularly, could include the following activities in each part: The first part “Introduction” includes two pedagogical principles and one question. Principles concern the effect of the resources-based investigation on critical thinking and the Internet usefulness as a learning tool. The question combines the two principles in a research-question: “How could we design the teaching of a theme, which the students will investigate independently by using ICT?”

The second part “Task” presents the two subtasks in the form of a scenario concerning a school-teachers board meeting simulation: “The teachers’ board of your school decided to transform the school into a “Digital School”. Two colleagues undertake the tasks: (a) to learn and inform colleagues about WebQuests in the context of school-focused training and (b) to prepare a scheme of work and send it to your School Advisor/educator asking for feedback”.

The third part “Process” includes five steps with different titles to help the navigation across activities-slides and create a positive psychological atmosphere.

The first step “Starting with the basics” includes two questions: “What is a WebQuest?” and “What is the structure of a WebQuest?” and provides two web resources. The activity concerns the elaboration on the collected information by the creation of a concept map. The second step “Learning by exemplum” includes two activities: one preparatory (to study different types of WebQuest tasks and choose one to describe it) and the main activity that concerns the study of one WebQuest from a database and the completion of its identification cart. The third step “Evaluators” includes two activities concerning the evaluation of the previously studied WebQuest: one role-play (skeptical vs. enthusiastic teacher) and the writing of an evaluation report based on some specific assessment criteria chosen by the educator or teachers.

The fourth step “Come to tell you what we’ve learned!” concerns the accomplishment of the first subtask. The teachers prepare a presentation aiming to inform colleagues (e.g., the school-board) about their studies so far. The fifth step “...we’ll become much more able than you” concerns the design by the teachers of one WebQuest on the theme and discipline of their choice that would best suit to their grade students.

The fourth part “Evaluation” consists of two activities entitled “... we have come a long way” and “Mission accomplished...”. They include two types of assessment based on the same criteria they used before for the assessment of the online WebQuest: a self-assessment of their own WebQuest, its peer-assessment by the colleagues, and the feedback from their School Advisor/educator.

The last part “Conclusion” congratulates the learners on their work, asks them to write down what they have learned and what else they would like to learn on this topic.

Finally, the training session includes asking teachers to reflect on their previously articulated perspectives and their new dispositions and feelings on teaching by using Internet and WebQuests and communicate them in different modes/media.

#### **4. Conclusion**

We live in a rapidly changing world. The old answers to teachers' training do not satisfy us anymore; we need to articulate new questions and undertake challenges. May this active technique be a threshold that will lead us to new questions about fostering professional development of in-service teachers.

#### **Notes**

<sup>1</sup> "Educator" refers to teachers' trainer.

<sup>2</sup> We kept the term "evaluation" that Dodge (2006) uses, even though it is not accurate concerning the context of use. In the learning context of school or seminar the more appropriate term is "assessment" because "evaluation" refers to a research context.

<sup>3</sup> The proposed WebQuest exemplar was applied during computer lab sessions offered in one-day training seminars to primary school teachers of the fifth educational district of the prefecture of Karditsa, Greece.

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## **5.4. Supporting teachers' professional development in classroom use of ICT via distance learning adaptability**

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### **Abstract**

*The concept of this project is based on an educational scenario focused on primary school teachers' needs. This scenario is structured into two core concepts: a) the way of using Logo – like digital environments and b) the implementation of these environments through building educational scenarios in classroom. In other words, we create a scenario to teach educators how to create their own scenarios by using logo – like environments of learning and how to use them during their educational practice, especially during teaching geometry.*

**Key-words:** Teacher development, ICT, distance learning, adaptability

### **5. Introduction**

This proposal describes the construction of the theoretical framework of teachers' distance learning training in regards to the use of Information Communication Technologies (ICT) in classroom teaching. More specifically, it discusses teachers' ability to design and use a logo-like learning environment through the construction of educational geometry scenarios. At the same time, they have the opportunity to be engaged in experiential activities of meaning making, analysis and application of digital tools (Web 2.0), and modeling artifacts in practice.

As such, teachers learn to construct logo-like environments, using E-slate software for teaching geometry or other disciplines in Elementary School. Based on principles of distance learning and adult education, we build specific activities in accordance with the principles of the "New Learning" (Kalantzis & Cope, 2013) and personalization according to the learner needs. We used the platform *INSPIREus* (Intelligent System for Personalized Instruction in a Remote Environment for US), an innovation in the field of distance education, which could be used to train teachers in the use of ICT with additional educational value in the classroom.

However, as reported by Hanson and Robson (2003), the primary issue is the parameter of the learning effectiveness in Online Learning and the detection of the pedagogical dimension of tools to support learning norms in conjunction with communication and interaction (Papanikolaou & Grigoriadou, 2005).

Nevertheless, the fact that new technologies are the basis of an evolving socio – economic change, which does not leave out the influence of the educational system, they could be the framework of teacher professional development. In this context, this presentation is a proposal to implement distance teacher training, taking into account the strengthening of the teacher role (Kynigos, 2011). In this framework, the teacher as a designer of activities appears in the model TPACK (Technological Pedagogical Content Knowledge) through multiple interactions that applies the triple dynamic parameters of knowledge: Content Knowledge (CK), Pedagogical Knowledge (PK) and Technological Knowledge (TK) (Smyrnaiou, Petropoulou, & Sotiriou, 2014). These dynamic dimensions of knowledge in education are the mainstay of the planning

proposal training scenarios concerning the pedagogical use of ICT in teaching practice through the adaptive learning platform, *INSPIREus*.

## 6. Theoretical framework

*INSPIREus* is an adaptive educational hypermedia environment that allows learners to freely explore the content offering them individual advice (Papanikolaou, 2014). Its latest version includes collaborative functionalities and flexible authoring process that allows users to reflect their pedagogical perspective on content development. This platform allows users to comprise an online community having one or more roles with different rights, such as learners, tutors, authors, reviewers. In our case, teachers have the ability to participate in groups, communicate and share their good practices. *INSPIREus* supports the interaction analysis model, which examines the social construction of knowledge in computer conferencing (Gunawardena, Carabajal, & Lowe, 2001), as a main challenge is the visualization of interaction analysis in a meaningful way for learners and tutors. Finally, learners have the opportunity to interact with the learner model aiming to cultivate metacognitive knowledge (Bull & Key, 2008).

Research on individual differences –in particular, in learning and cognitive style– has been used as a basis to consider learner preferences in a web-based educational context (Papanikolaou, Gouli, Grigoriadou, 2007). According to the design principles for Distance Learning, our educational material is based on the following principles:

- provide guidance through clear goals and objectives and Tips to facilitate student's study,
- promote interaction with the learning material through easy access and uniform structure of the proposed material,
- explain difficult points and concepts through presentation of various types of material and additional support elements,
- evaluate and inform about his progress through the self-assessment page that exists at the end of each concept,
- allow free choice of place, time and pace of the study supported by the adaptive learning platform *INSPIREus*.

As far as the support of the trainee is concerned, the aim and the main objectives of each concept of this scenario are made clear at the beginning of the activities following the needs of the trainee. In addition, there is a “Self-Evaluation” activity based upon all components of the scenario, including the appropriate feedback. According to Kulhavy and Stock (1989), effective feedback must include two types of information: confirmation (verification) of the correctness or the learner's response and instructions / directions (elaboration) regarding the correct answer. Consequently, we tried to provide full feedback on both correct and incorrect choice in most cases of self-assessment exercises.

Despite the Distance Learning principles, as this scenario refers to professional teachers, we focused on the accordance with the principles of Adult Learning as well (Livingstone, 2015). One of the first priorities was to help educators be engaged interactively and communicate sufficiently through various components of *INSPIREus* platform. For this reason, we created many exercises and activities both in the technical part of the use of logo-like environment and its possible application in classroom.

On a second level, we moved on promoting aspects of critical thinking, intergrading various actions of critical analysis of educational applications based on new technologies, in particular, Logo programming language. In addition to these, we took

into account the learner needs, interests and learning potential by enriching the educational materials with various sources (Web 2.0 tools).

As far as the support of learner active participation is concerned, we added the experience and knowledge acquired by creating individual page “experiencing” in both main concepts of the educational scenario. Finally, we tried to promote interactive instructor-learner relationship through the construction of several engaging discussion activities, throughout the various activities of the course.

## **7. Description of the design of scenario**

Allowing for the specific objectives of the first concept of our scenario regarding programming in logo – like environments, learners will be able to:

- Be aware of the possibilities offered by Logo language in educational environments and its characteristics.
- Discern what software work with programming language Logo is.
- Identify the different orders of programming language and use each command according to teaching needs.
- Build ‘microworlds’ using coding in Logo Language.
- Evaluate the code (best possible code).

Considering the specific objectives of the second concept of the script on the application Logo – like environment in the classroom learners will be able to:

- Discover additional pedagogical value resulting from the application logo – like software “E-Slate” in the teaching of geometry.
- Specify the basic principles of creating educational scenario based on logo-like environments.
- Build training educational scenarios based on logo – like environment of ‘turtleworld’.
- Compare traditional teaching with the implementation of a training scenario based on the use logo – like learning environment in primary school geometry.
- Design training scenarios using other colleagues scenarios by modifying the appropriate one and adapting them to their own needs.
- Evaluate their colleagues’ training scenarios through specially designed criteria evaluation.

The design of our educational material based on Distance Learning and Adult Learning principles we stressed above is structured to: (a) replace, to the greatest possible extent, the teacher absence and perform various teaching functions carried out by the teacher in traditional education (b) serve the needs of Distance Learning (DL) and the Open Education providing students the opportunity to study and learn in their own way to the place, time and pace which they themselves have chosen and (c) follow the adult learning principles (in the case of material relating to teachers).

More specifically, the form of our educational materials is composed of a series of amendments in order to be user-friendly, manageable and readable. For example, different colors and dividing lines distinguish the pronunciations of the material. The sharp difference of blue – red to the requested pronunciation gives the necessary emphasis to better engage the learner in the material of the page. Additionally, the use of multimedia elements have been used numerous Web 2 tools that make the trainees’ involvement easier, as prezi presentations, digital books, slides share tools for a summary of the material and hyperlinks pointing directly to the proposed material, Electronic Brain Storming Tools (EBS) tools. As far as the structure of the information about the course is concerned, information, such as the purpose and expected outcomes and the prerequisite concepts including definitions are involved.

Regarding the organization of the curriculum, it is distributed in small units of four pages (Experiencing – Meaning Generating – Analyzing – Applying) in each of the two concepts (Logo- like learning environments and their application in primary school within the creation of educational scenarios). On each page there are four different activities that include questions, theory, example, exercises and activities. In this way, student has the opportunity to refer to individual activities, as there are alternative ways to access depending on the learner characteristics (personalized learning).

Finally, in terms of navigation, students easily distinguish the links, while the material leads to further investigation. There are many ways to navigate, once incorporated – where possible – web 2 and many presentation tools into the platform (prezi, digital books, hyperlinks, slide presentations, etc.). The duration proposed for these activities is 13 hours, five hours designing a Logo-like environments and 8 use Logo-like environment in the teaching – learning process.

The construction of this scenario, which was based on the design principles of the ‘New Learning’ that, according to Cope and Calatzis (2015), is part of the significant social changes of our time. Educational scenarios, which enforce ‘learning by design’, are “the complete record of a teaching proposal in its entirety, from the identity of the creator to the detailed description finalized” (p. 219).

Starting, then, our educational planning scenario, we laid the foundations through the grounds of the scenario in which we defined the cognitive area concerning the training of primary school teachers and the general purpose and objectives that will guide the proposed activities and enrichment of our educational material. So, we initially set two key questions of whether we have highlighted difficulties regarding the concepts we have developed and what is the added educational value that emerged through the implementation of our script:

a) Would it be useful for teacher training to involve their active use of the logo – like learning environments in the classroom?

b) What is the added value that emerges through the script and what specific actions cannot be achieved through conventional representational media, while extending the trainee cognitive horizons?

Based on these considerations we defined the core purpose of this scenario adapted into INSPIREus platform:

The main purpose of the educational scenario ‘Logo- like Learning Environments in Primary Education’ is the training of teachers in the use and exploitation of learning environments based on the Logo programming language during the teaching – learning process through the support and customized interactive DL activities in the adaptive environment of INSPIREus.

The general objective pursued by the individual targeting both of the two concepts and each page contained therein. We should emphasize that both teachers followed the following wording:

“Students will be able to [verb] [qualitative determination]”.

The [verb] describes the type of activity you will be able to implement to the students (e.g., solving, describe) and [qualitative determination] describes the environment, the degree of difficulty or the method to be used (e.g., to solve equations of the type x describing the impact of newly voted law for social welfare).

Following the model of the New Learning and Learning by Design, you can analyze the second important element of the Cognitive Processes, for example, the kinds of activities that are distinct modes of production / construction of knowledge and learning.

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## **5.5. It works but how?**

### **The importance of educational robotics as a precursor of Computational Thinking in early childhood education**

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#### **Abstract**

*The critical role and impact of education on defining employment opportunities has been pointed out in several occasions at the European level (EU, 2006, 2015). The teaching of mathematics, programming and science (STEAM) could significantly contribute to social and economic development but should be aligned with the demand for specific skills, such as computational and analytical thinking, even from the very early stages of education (Barr, 2011; Repenning, 2010). In this paper, based on recent work with contemporary technologies, which was conducted within the Learning Technologies and Mathematics Education Lab (LTME, Department of Early Childhood Education, University of Thessaly), we focus on if and how Educational Robotics (ER) acts as a precursor of Computational Thinking (CT) in early childhood education and we intend to make a brief reference to indicative practices.*

**Key-words:** Educational robotics, computational thinking, early childhood education

#### **8. So, what is Computational Thinking?**

The discussion about Computational Thinking (CT) is not new, since for the first time during the 1960's, Alan Perlis addressed the need for students of all disciplines and fields to look seriously into the "theory of computation" and learn programming as part of a generic but highly important set of skills (Guzdial, 2008). Later on, the concept of CT in the context of education was systematically described by Seymour Papert (1993) throughout his work in MIT during the 70's and 80's. Papert pioneered the why and how children should develop procedural thinking through LOGO programming while working in "microworlds" full of math problems that called for solutions (Papert, 1980). Essentially, the term CT was coined by Jeannette Wing in 2006 in order to propose a set of systematic thinking patterns and tasks in various fields of action. It is worth pointing out that diSessa's idea of "computational literacy" (diSessa, 2000) predates Wing's call to action for CT in school education and while the two terms can be confused, since they seem to address similar issues, CT tends to be preferred in research and practice today.

As Wing states in later work (2008): "CT involves solving problems, designing systems, and understanding human behavior, by drawing on the concepts fundamental to computer science" (p. 3717). In 2011, she revisited the topic by redefining CT as the

thought processes that are involved in formulating problems and their solutions so that the solutions are represented in a form that can be effectively carried out by an information-processing agent. In a later attempt to further simplify the definition of CT, Aho (2012) argued about the thought processes that are involved in formulating problems so that their solutions can be represented as computational steps and algorithms. As much as the aforementioned definitions are widely accepted, we feel that CT can be defined as the capacity to undertake a problem-solving process using distinctive techniques, typical of computer science, among which:

- representing information through abstractions and pattern generalizations including symbol systems, models and simulations
- logically structuring and analyzing data
- automating solutions through algorithmic thinking
- debugging and performing systematic error detection
- developing conditional logic and parallel thinking
- formulating problems in a way that facilitates the use of computerized tools for their solution
- modularizing, thus, reformulating and decomposing a problem into small sub problems

These abilities are of great value not only to informatics professionals but they actually underlie strategies for dealing with everyday life problems. Even though the CT term might be elusive to a wider public outside the field of computer science, it coincides with the key elements of the epistemology of Constructivism that was developed by Jean Piaget and its “reinvention” in Papert’s philosophy of Constructionism as expressed through the use of LOGO tool(s). Besides criticism, LOGO gradually established itself and at the same time inspired new tools and environments, such as Roamer, BeeBot, ProBot Lego WeDo/EV3, Algoblock and later on, languages, such as Scratch, Blockly, Quetzal, Tern, all of which seem to enhance CT, thus, the learning process in itself.

## **9. How do CT and ER match together?**

Robots, programmable devices and automata are neither fiction objects nor items only for scientists to tinker with. Even though they are based on relatively high-end technology, they can be easily traced and bought anywhere, even in common non-specialized shops “just around the corner” thanks to the dramatic retail price reduction which made them extremely affordable. Many educational robotic kits have been developed by commercial companies as well as by research laboratories (Martin, Mikhak, Resnick, Silverman, & Berg, 2000; Rogers & Portsmore, 2004; Rusk, Resnick, Berg, & Pezalla-Granlund, 2008); considering the growing popularity of such devices and kits, the interest in adapting their use in classrooms with students of various ages is overwhelming (Rogers, Wendell, & Foster, 2010). Maybe today, more than ever, it is safe to argue that we witness the new generation of technology (super) literate preschoolers and young children that have easy access to high end programming procedures in a playful and rather unconscious manner thanks to the “democratization” of such technologies that are not anymore intended for “the classes but for the masses”, as Tramiel held, a former Chief Executive Offer and founder of the pioneering Commodore brand during the 70’s and 80’s.

Besides, ER either as an already established educational tool or as a widespread discipline seems to have the potential to provide opportunities for young children to learn how to construct, program and solve math problems and be a gateway to get to know the scientific method of inquiry (Rogers & Portsmore, 2004), to actively take part

in social interactions and negotiations while playing to learn and learning to play (Resnick, 2003). Bers (2008) argued that modern robotic kits should be considered the new generation of sophisticated learning manipulatives that are fairly equivalent to the early, traditional manipulatives of Montessori and Fröbel since they both act as visual aids for children when it comes to understanding math concepts. However, what modern manipulatives can do better is the possibility they offer to children to explore a wider range of concepts and powerful ideas that were previously considered technically difficult to deal with (Resnick, Berg, & Eisenberg, 2000) as well as the multimodal “visualization”, namely, the understanding of complex abstract ideas (Bers, 2008).

Children learn to conceive, create and improve –until perfection- computer programs in a meaningful way because they want their devices to respond to stimuli of the environment in order to perform certain tasks; debugging, algorithms, sequences, flow charts and many more programming concepts and tasks that until recently were considered out of the cognitive range of children might actually be possible even for 4-5 years old preschoolers, according to recent research (Bers et al, 2014). The really common field between CT and ER is exactly the importance of abstraction in the procedure of selecting inputs (manipulation of variables and computational instructions), observing outputs (outcome data) and decomposing what happens in between. Abstraction in CT involves the essential skill of extending computational instructions to behaviors ranging, thus, from a programming language to an observable output and tangible effect in order to spot possible bugs and causes of failure and decide which elements need to be retained or rejected in the input-computation-output algorithm (Wing, 2006).

In order to see how ER enhance CT in early ages, it could be rather useful to consider what Howland, Good, and Nicholson (2009) describe as the main CT skills that not only represent key concepts in computer science but they are of high value for non-programmers too: a) The ability to understand and set precise and clear instructions for carrying out a process. This particular skill relates to documenting the instructions step-by-step in order to resolve any ambiguities and misconceptions and, of course, designing the flow of control, thus, the programming structures and operations as they occur in the right order (e.g., conditions, loops and branches etc). In our research activities, one of the first steps that the students have to necessarily take first and prior to putting their hands on computers and robots is to reflect on their “mission” and try to “sketch out” and graphically represent their thoughts about the required steps and actions that, later on, will be “translated” into an executable program. b) The capacity to design a system consisting of distinct characteristics with clearly defined divisions of responsibility and functionality. More specifically, this relates to “breaking” problems into simple and more distinct parts, which ensures that the components of a program are not overlapping with each other and that, while each function has its own validity and uniqueness, it is still a piece of the programming chain and part of the “bigger picture” of the final program that leads to the desired result (e.g., Scratch, Lego NXT etc). In our work with early ages, we tend to favor this way of thinking that helps to link the programming procedure with visible and tangible objects and outcomes, because children are anxious to verify their assumptions immediately and usually prefer concentrating on each separate movement as independent steps and not as equal parts of a “whole”. c) Understanding that a complex system behavior doesn’t exist on its own but it rather results from a set of representations and simple interactions that are based on specific rules, especially on thorough debugging. It is important for children to understand that a specific behavior will occur by analyzing a system, especially when working with young students and robotics, teachers usually encounter problems in

scaffolding their problem-solving processes (Bers, 2008). In the case of our activities, in most –if not all- the cases, we aim at helping students understand and adopt the cyclical process used by real-world engineers and programmers. Its steps include identifying a problem, looking for ideas, developing, testing, improving and sharing solutions with others. In the classrooms that are introduced to robotics, this process places emphasis on continually changing and enhancing the child’s perspectives and learning patterns through real conditions of “pseudo-programming” rather than pursuing “the right answer” from the beginning!

### 3. Applied CT for young children through ER activities

Most of the work that is conducted within the framework of LTME Lab’s robot-oriented activities is based on “smart tech toys” like Roamer, Lego Mindstorms NXT, WeDo, BeeBot and LightBot. Our experience with preschoolers and generally young students is based on the teaching experiment paradigm (Chronaki, 2008), since we prefer focusing on the dynamics of powerful ideas, emerging mathematical concepts embodied in the process of studying the movement of a robot in a preset environment having a well established aim. In most cases, children pursue their *Zones of Proximal Development* throughout a collaborative effort of planning and programming the motion of a robot or a digital character in Scratch, for instance, while they have the opportunity to shift from the “mythical” dimension of typical robots to a more pragmatic view that helps realize that the control of a robot depends on planning and that they can assume the role of its programmer. Our experiments mostly apply to classes of 15-20 infants with varying skills in technology, mathematics, fine mobility, teamwork and reflective thinking. The proposed methodology in using ER with early ages involves the following steps and sessions in a linear but not strict manner:

- we approach the issue of robotics and programmable motion in space while we try to document their perceptions and former knowledge of such devices (through means of personal expression, such as drawings), as well as making them grasp the idea of symbolizing motion and link it to “other” semiotic systems
- we discuss and “debate” upon the phenomenon of robot motion and “attitude” by observing real robots move and interact in space in real time
- we encourage experiential role-play in terms of robotic action and try to make them see how abstract ideas are linked to more specific ones and how symbols and instructions translate into action
- we practice the use of software and hardware that we intend to involve later and this occurs in "trial and error" sessions that engages small groups of 3-4 children
- we encourage creation-experimentation-evaluation through real time and real world problems in which the robot has either a central role or it is part of the solution.



Figure 1: Sketching up a “solution”, planning, sequencing, testing, debugging

Over the past years, through participant observation and data analysis and outcomes of teaching experiments spanning days to weeks, we have developed a view on CT patterns and a teaching framework which involves three key dimensions:

(a) Computational concepts. First of all, young students get to know and explore the concept of *Sequence* (when they have already conceived a plan of action they still have to identify their steps in perfect order, one step at a time) and *Data* (when a group of children has to make a device walk or run based on the NXT programming environment, they have to tweak values and parameters otherwise the robot won't work at all or it won't do what they want it to do). (b) Computational practices. From our documentation, interviews and observations of young programmers, it is evident that framing CT solely around concepts, insufficiently represents other important elements of children's learning and participation, such as the processes of construction and the design practices, we saw kids engaging in while playing with robots. We have observed four main sets of practices:

- experimenting and iterating: developing a little bit, then trying it out, then developing more
- testing and debugging: making sure things work — and finding and solving problems when they arise. After some practice, students seem to grasp the idea of developing a little bit and, then, testing each step at a time in order to ensure that everything goes as predicted
- reusing and remixing: making something by building on existing projects or ideas
- abstracting and modularizing: exploring connections between the whole and the parts

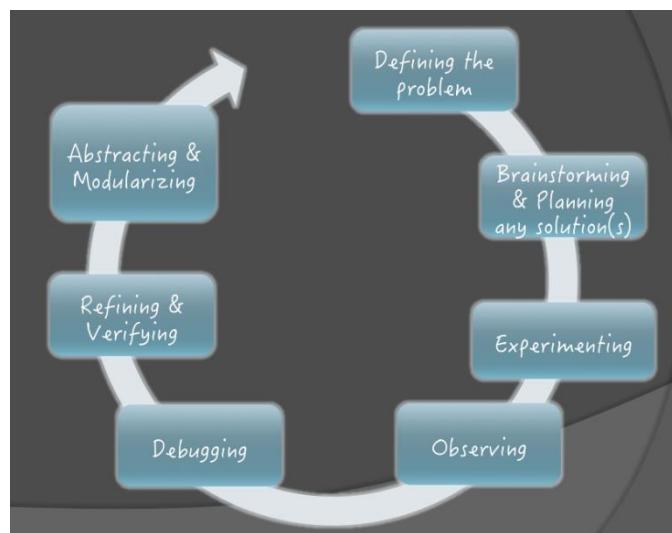


Figure 2: Computational thinking practices. In class full circle.

(c) Computational perspectives. We heard young “programmers” describe shifting and evolving understandings of themselves, their relationships with others and the technological world around them. Such changes in their perspective include three basic elements:

- Expressing: realizing that computation is a medium of creation, “*Hey, I can make a robot that does what I tell HIM to do!!*”
- Connecting: recognizing the dynamics of common creation with others, “*We*

*can do incredible things when we collaborate all together!"*

- Questioning: feeling empowered to ask questions about the world that surrounds us, “*..and what if we decided to use the same motion block?*”

While engaged in projects with robots, young students dare to ask and question everything that they don't understand, which could also happen because such activities and environments require open ended solutions and many possible ways of acting. It's the nature of this kind of game that promotes exploration.

#### **4. Last but not least...**

Of course, it's not a “new” vs “old” toys and tools issue. Programming, robots and controllable devices are by no means cure-all tools for every context in classrooms. We strongly believe in the value of ER as new-age manipulative with great potential towards the development of CT in early ages. More potential is still to be unfolded as such technology becomes even more sophisticated and affordable for every student, every teacher and every school.

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## **5.6. Development and evaluation of a 3D virtual environment for teaching solar system's concepts**

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### **Abstract**

*The study examines the development and use of a 3D virtual environment for teaching solar system's concepts. The objectives were to examine the environment from a technical perspective and whether the learning objectives were achieved. Two groups of randomly selected students were formed. The first group used the application, while the second group was given the same cognitive material, but they were asked to use an online presentation program. The results are considered satisfactory. Both groups showed significant progress in knowledge acquisition, but the first group had better overall results.*

**Key-words:** Virtual reality, 3D virtual environments, solar system, constructivism

### **1. Introduction**

In general, school students, university students, as well as teachers have difficulties in understanding concepts related to celestial phenomena and astronomy (Chen, Yang, Shen, & Jeng 2007; Gazit, Yair, & Chen, 2005; Hollingworth & McLoughlin, 2001; Sun, Lin, & Wang, 2010). For example, first grade primary school students believe that the Earth is flat. Older students know that the Earth is a sphere, but they still cannot understand the rotation of the planets (Ozsoy, 2012). Students are not usually able to realize concepts, such as relative sizes and distances, or that the Sun is at the centre of our solar system (Spyratou, 2008). Moreover, knowledge related to astronomy is not enriched after finishing secondary education (Simitzoglou & Halkias, 2007).

Modern pedagogical approaches seek new tools that can contribute to a better understanding of the aforementioned concepts. In this context, Virtual Reality (VR) can be an important tool, since it is a 3D simulation, where students come in contact with artificial environments, which give them the ability to discover and use knowledge (Barnett, 2005).

### **2. Virtual reality and education**

In VR, users have the feeling of being in a real world (Hew & Cheung, 2008). From a purely technological perspective, VR is "a set of hardware (computers and special devices) and software (graphics and animation programs and special virtual world development projects) with which people are able to visualize and interact with highly complex data in three dimensions" (Fokides & Tsolakidis, 2011, p. 50). Three are its main features: immersion, interaction and imagination:

- Immersion: It is the illusion of "being" in the virtual world.
- Interaction: User's actions result in reactions of the environment and vice versa.
- Imagination: Real as well as imaginary objects and environments can be realized,

while the user can set his imagination free (Kokotos, 2007).

In general, ICT based learning environments contribute to a better understanding of a subject, bridging the gap between activities at school and the authentic cultural activities (Hew & Cheung, 2008) and the promotion of knowledge construction (Huang, Rauch, & Liaw, 2010). Constructivistic learning environments include opportunities for dialogue among students. Conversations not only strengthen cooperation, but also support social negotiation in learning (Dalgarno & Lee, 2009; Lee & Wong, 2008; Vygotsky, 1978). This, in turn, enables learners to share information, test ideas, and reflect on learning (Lee & Wong, 2008). Moreover, the constructivist learning environments promote the development of problem solving skills (Dalgarno & Lee, 2009).

VR enables users to create, manage and edit 3D virtual objects, encouraging students to express their personal thoughts about the world and construct their knowledge (Pan, Cheok, Yang, Zhu, & Shi, 2006). It supports constructivist learning activities by allowing students to become active learners (Mikropoulos & Natsis, 2011; Pan, Cheok, Yang, Zhu, & Shi, 2006). Furthermore, the sense of presence and activities in virtual environments enhances and attracts students' interest and as a result the educational process is more effective (Girvan & Savage, 2010; Martin, Diaz, Sancristobal, Gil, Castro, & Peire, 2011; Mikropoulos, 2006).

### **3. Rationale and development of the application**

During the study's preliminary phase, a questionnaire was used in order to evaluate what pre-service teachers know about the solar system. It was administered to a random sample of students attending the Department of Primary School Education, University of the Aegean ( $N=48$ ). Result analysis confirmed that most students' knowledge level regarding the solar system is very low (Table 1). For instance, only 18.75% of students correctly answered the questions about satellites of our solar system. As for the missions for the study of our solar system, 70.8% of students were not aware of them. These results directed the application's content, since the focus was on subjects where students showed poor results.

**Table 1**  
*Students' Performance in the Initial Questionnaire*

Category	Average of Correct Answers per Category (N)	Performance (N%)
Number of Planets	0.29	29
Sun	1.27	42.3
Planets	2.96	29.6
Dwarf Planets	0.46	23
Satellites	1.125	18.75
Total	6.1	27.7

The second step was the development of the virtual world, using OpenSimulator. OpenSimulator is an open source project that is based on the technology of Second Life (SL). It allows the construction of multiuser 3D virtual environments using various technologies, compatible to SL. The total area of the virtual world was 768 x 768 meters.

Three levels were created. The first has an observatory where the students got the first piece of information about the solar system through images (Figures 1 & 2).

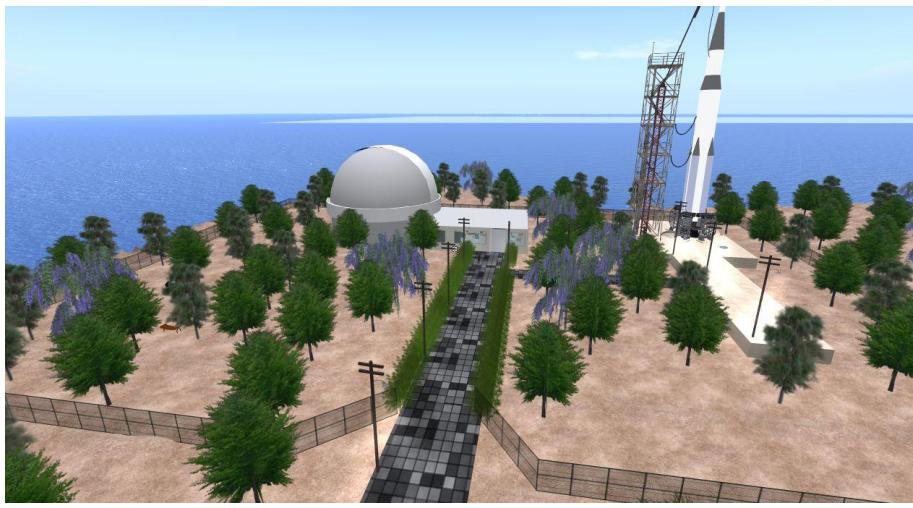


Figure 1: The first level of the application.



Figure 2: The interior of the observatory.

The second level was the first depiction of the solar system, including the Sun and the eight planets. Students could observe the movements of the planets, around their axis, as well as around the Sun (Figure 3). The planets were designed on a scale of 1:15.466.730; however, due to the limited size of the virtual world, the distances of the planets from the Sun remained relevant but not scaled.

The third level was the second illustration of the solar system, including the Sun, the eight planets, Pluto, some satellites as well as the spacecraft Voyager. At this level, students were informed about the solar system, by reading the information, observing the objects, seeing slides and watching related videos. At the final stages of the development, scripts were added that allowed interactions (i.e. welcoming and greeting the user, allowing the user to watch videos, etc.).

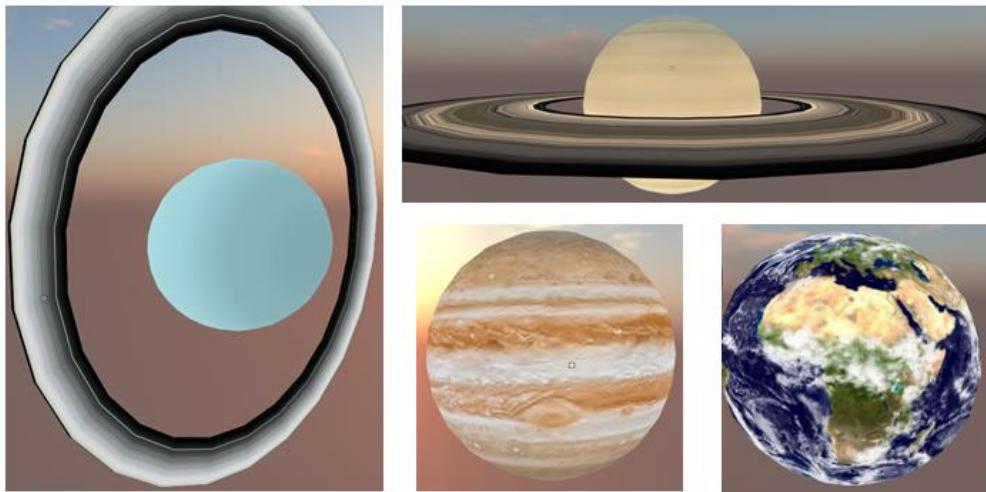


Figure 3: Uranus, Saturn, Jupiter and Earth, as seen from the second level of the application.

The most time consuming procedures were the collection of the cognitive material, the construction of objects and the addition of scripts (Table 2). The development of a virtual environment is quite a lengthy process, however, long term benefits of its use may arise, since it can be used several times.

**Table 2**  
*Total Construction Period of the Virtual World*

Construction Stages	Hours
Material Collection	20
Object construction	60
Script addition	30
Image addition, videos, web pages, NPCs	15
Application control	4
Minor adjustments-Improvements	6
Total	135

In parallel with the development of the virtual world, an online presentation was produced, containing the same cognitive material (images, videos and information) the virtual world had. As a result, two teaching methods were devised (virtual world and online presentation).

#### 4. Research design and procedure

The sample consisted of randomly selected students of the Department of Primary School Education, University of the Aegean, divided into two groups of 20. The first group was going to use the 3D application, while the second group was going to use the online presentation. For data collection purposes a total of 3 questionnaires were formed. Questionnaires 1 and 2 were administered to both groups, before and after the use of both applications aiming to test the knowledge acquisition. The second questionnaire was formed based on the first one, so that data could be comparable (Table 3).

Table 3  
*Questions Categories in Questionnaires 1 & 2.*

Category	Questionnaire 1	Questionnaire 2
Number/order of Planets	1	1
Sun	3	4
Planets	10	14
Dwarf Planets	2	3
Satellites	7	23 (grid questions)
Planetary missions	1	8

Questionnaire 3 included questions for the technical and utilitarian evaluation of the virtual world and was given only to the first group.

Prior to using the VR application, a meeting with the first group was held, in order to familiarize students with the environment and its use. This process lasted about an hour. Each group had at its disposal one week to study the information either by exploring the virtual environment or by viewing the online presentations. At the end of the week students of both groups were given Questionnaire 2. To avoid possible “cheating” and ensure the reliability of the survey, both groups were gathered at the University's Computer Laboratory at a specific day and time and completed the questionnaire. In addition, the first group was given Questionnaire 3 to assess their experience.

## 5. Result analysis

Overall, in Questionnaire 1, students of both groups and the initial random sample ( $N=88$ ) correctly answered 6.69 questions out of 22 (score 30.4%) on average (Table 4). It is worth mentioning that in the category referring to planetary missions, 73.9% of students were not aware of any mission at all (the question in this category was open, so it is not included in the table).

Table 4  
*Students' Performance in the Initial Questionnaire*

Category	Average of Correct Answers per Category (N)	Performance (N%)
Number of Planets	0.43	43
Sun	1.33	44.3
Planets	3.15	31.5
Dwarf Planets	0.53	26.5
Satellites	1.25	20.8
Total	6.69	30.4

Regarding the progress of the first group of students (VR application), it is considered important. In Questionnaire 1, students correctly answered 7.9 questions out of 22 (score 35.9%) on average. In Questionnaire 2, the correct answers were 50 out of the 53 (score 94.3%) on average (Table 5).

**Table 5**  
*Performance of the First Group*

Category	Questionnaire 1		Questionnaire 2	
	Answers * (N)	Performance (N%)	Answers * (N)	Performance (N%)
Number of Planets	0.65	65	0.9	90
Sun	1.4	46.7	3.75	93.75
Planets	3.55	35.5	13.15	93.9
Dwarf Planets	0.7	35	2.75	91.7
Satellites	1.7	28.3	22	95.65
Planetary missions	-	-	7.45	93.125
Total	7.9	35.9	50	94.3

Note. \* = Average of Correct Answers per Category

Students' progress in the second group (online application) was also important (Table 6). In Questionnaire 1, students correctly answered 6.9 questions out of 22 (score 31.36%) on average, while in Questionnaire 2 the correct answers were 43.75 out of 53 (score 82.55%).

**Table 6**  
*Performance of the Second Group*

Category	Questionnaire 1		Questionnaire 2	
	Answers * (N)	Performance (N%)	Answers * (N)	Performance (N%)
Number of Planets	0.55	55	0.45	45
Sun	1.4	46.7	3.5	87.5
Planets	3.2	32	11.7	83.57
Dwarf Planets	0.55	27.5	2.3	76.7
Satellites	1.2	20	19.65	85.4
Planetary missions	-	-	6.15	76.875
Total	6.9	31.36	43.75	82.55

Note. \* = Average of Correct Answers per Category

The first group of students had relatively better overall performance compared to the second group (Table 7). Significant differences were observed in the category of dwarf planets (91.7% and 76.7% respectively) and in the category of missions (93.125% and 76.875% respectively). The greatest difference was observed in the first category referring to the order of the planets; the first group had 90% correct answers, while the second group only 45%.

**Table 7**  
*Students' Performance in both Groups*

Category	First group <sup>*</sup> (%)	Second group (%)
Number of Planets	90	45
Sun	93.75	87.5
Planets	93.9	83.57
Dwarf Planets	91.7	76.7
Satellites	95.65	85.4
Missions	93.125	76.875
Total	94.3	82.55

Note. <sup>\*</sup> = Average of Correct Answers per Category

Finally, regarding the third questionnaire, students made positive remarks for the application (with 65% stating that its "strongest" point was the organizations of the virtual world). 55% of them claimed that they found no "weak" points, while 20% experienced application lagging (unsatisfactory application's display speed). 25% stated they did not encounter any difficulties, while a significant percentage (40%) had difficulties in handling the avatar. Nevertheless, the majority of students (80%) did not face any problems regarding the virtual world. Moreover, students stated that the application did achieve its educational goals. The average time that students spent on the exploration of the virtual world was about two hours.

Overall, several positive and negative characteristics of the virtual worlds were acknowledged. Indicatively, regarding the positive characteristics the following were mentioned: "they visualize situations that in reality it is difficult and/or impossible to do so; they are attractive; they offer realistic visualization of situations; they stimulate the students' interest etc". Regarding the negative side, the following were reported: "specialized knowledge is required by the user; it takes a long time to be developed; it requires powerful computers; technical problems may arise". It is worth mentioning that 25% of the users considered that the 3D virtual environments have no negative aspects. Finally, 95% of the students stated that they would use a virtual world in their teaching.

## 6. Conclusions

Students had very little knowledge of basic terms and facts regarding the solar system. This was evident in their initial performance in both the diagnostic questionnaire and in Questionnaire 1. This agrees with previous studies, which noted the problems and difficulties they have in understanding basic concepts in astronomy.

Regarding the results of the first group (virtual world), progress has been made in students' performance on questions related to the observation of the solar system rather than in pure memorization of information. In addition, students acquired knowledge in areas where they initially had low performance, such as the missions to the planets of our solar system and the composition of the sun.

Regarding the results of the second group (online presentation), progress was also noted. It is worth mentioning, however, that while in the initial questionnaire, the majority (55%) knew the number of planets in the solar system, in Questionnaire 2, only 45% knew the correct order of the planets. This may be due to the fact that students could read the information about celestial bodies in any order they wanted (although presentations were numbered by the order of their distance from the Sun, corresponding to the application).

Comparing the above teaching methods, it seems that both groups showed similar

and high final results. However, the first group had an average of 94.3% correct answers compared to the performance of the second group (82.55%).

The research project is essentially about two asynchronous distance teaching methods for adults, without a teacher's supervision. In both cases, the user chooses when, how, and what to learn. The second method is closer to the traditional form of teaching; it is based on memorization of information. The first method, however, is closer to the modern pedagogical approaches, since it uses VR as a learning tool, which gives the user the ability to visualize events and situations and discover knowledge through active participation in the learning process.

Regarding students' views of the 3D virtual environment, it is worth mentioning that most of them (95%) would use this kind of applications in their teaching. Furthermore, they are willing to develop their own virtual worlds. It seems that despite the difficulties that some students experienced, these were not capable of changing their positive attitude towards this technological innovation.

Based on the aforementioned findings, it appears that the use of VR in teaching astronomy can lead to a better understanding of the relevant concepts. This may be due to the ability of the VR to visualize situations and concepts, whereas in real life it is impossible. Although the project used a small sample of individuals, it shows a trend, which can be taken into account in future applications. It would be interesting to carry out a similar survey that would include a larger sample in order to have more concrete results.

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## **5.7. Students' misconceptions in telecommunications**

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### **Abstract**

*The present study focuses on the analysis of students' misconceptions within the "Telecommunications Systems" course offered at the School of Pedagogical and Technological Education (ASPETE). The course introduces students to telecommunications and addresses topics, such as signals and Fourier analysis, amplitude and frequency modulation, pulse code modulation and digital modulation techniques. The misconceptions demonstrated in the exam papers of the 172 students of the 2013-14 and 2014-15 autumn semesters (both in the theoretical and the lab part of the course) were gathered, evaluated and analyzed. We observed that most of the students' difficulties and misconceptions were due to the lack of a proper background in mathematics and physics as well as a well-structured overview of the overall telecommunications subject. Awareness of possible misconceptions in telecommunications is expected to help teachers deliver telecommunications in a more efficient and comprehensible way and achieve a better understanding of the associated principles and techniques.*

**Key-words:** Engineering education, teacher education, telecommunications teaching, misconceptions

### **1. Introduction**

The term "misconception" is used to describe a situation in which students' ideas of a concept differs from scientists' ideas. The education and cognitive sciences have given intensive consideration to naive beliefs as well as misconceptions in both physics (Bao, Hogg, & Zollman, 2002) and mathematics (Culotta, 1992). Large surveys about overcoming students' misconceptions by new teaching methods have been undertaken (Hestenes, 1998) while misconceptions in signals and systems have been also studied (Nasr, Hall, & Garik, 2003; Nasr, Hall, & Garik, 2005).

In telecommunications, the interrelation among several important concepts often depends on mathematics, while students are unable to easily understand this relation. There is ample anecdotal evidence that students either lack the mathematical understanding needed to solve a problem in physics or engineering or they fail to transfer their understanding of the mathematics to a physics or engineering context (Sherin, 2001). Generally speaking, research on the use of mathematics in physics by students has either described the errors students usually commit when using mathematics in physics without any specific reference to students' internal cognitive structures (Clement, Lochhead, & Monk, 1981) or has described experts' and novices' problem solving approaches (Dhillon, 1998).

In this study, we identify students' misconceptions and the typical errors they commit in answering questions and solving problems within the telecommunications module. We report our findings on students' understanding of the fundamental topics involved in the study of waveforms, spectrums energy, power, Fourier transform and amplitude modulation (AM). We, also, investigate and discuss the cognitive resources which are responsible for those errors and misconceptions that underlie students' mathematical thinking. The results of this study provide us with an understanding of the mathematical reasoning students bring to or develop during their study of telecommunications. Such a study may be useful in the development of instructional material and influence teaching approaches that support students in learning telecommunications.

## 2. Method

This study was conducted at the School of Pedagogical and Technological Education (ASPETE), located in Athens, Greece, during the academic years 2013-2014 and 2014-2015. The participants were undergraduate Electrical and Electronics Engineering students who had attended the "Telecommunication Systems" course at a middle stage of their studies (3rd-year). This course, as taught at ASPETE, introduces students to the principles and techniques of telecommunications and addresses topics, such as basic concepts, signals and Fourier analysis, amplitude and frequency modulation and transceivers, Pulse Code Modulation (PCM), and digital modulation techniques. 172 students participated in the study.

Some of the misconceptions, as were demonstrated in the students' exam papers who attended the course (both in the theoretical and the lab part) were gathered, evaluated and analyzed. This paper focuses on the results obtained from the analysis of students' responses to the following fundamental subjects: sketching the amplitude spectrum and phase spectrum of simple signals (cosine, sine), finding the total energy and average power of simple signals, finding the Fourier transform of the simple signals, sketching the waveform of the AM signal in the time-domain (indicating the maximum and minimum amplitudes as well as the period of the carrier and modulating signals), determining the modulation index and sketching the time-domain representation of the Double Side Band (DSB), Upper Single Side Band (USSB), Lower Single Side Band (LSSB) signals (problems 1, 2, 3, 4). These problems were selected for this paper because they provide some convergent results on student understanding in telecommunications. Results obtained from the other problems will be discussed in future reports. The results discussed in this paper are based on the analysis of the transcripts, which were coded for the errors students typically committed in their analysis of answering the above questions. We also discuss the cognitive resources responsible for those errors and misconceptions.

This research is a qualitative study in which data obtained from answers to exam tests were analyzed using the approaches that require the definition of scientifically complete response and the classification of explanations in certain categories (Driver & Erickson, 1983). Six different categories are used to characterize answers— four levels have been determined to classify scientifically acceptable and unacceptable explanations and two levels to characterize no-coded explanations and no-answers. Scientifically Correct (A): Scientifically correct explanations. In other words, when answering completely all the questions providing the correct explanations. Partially Correct (B): Responses involving correct but incomplete explanations. Incorrect (C): Ideas including correct and incorrect explanation sentences or involve completely scientifically unacceptable arguments (misconception). Incorrect (D): Explanations

focusing on wrong aspects and confusing ideas (misconception). No-coded (E): Explanations which are difficult to understand what they imply or have no relation with the questions. No answer (F): Students who did not provide any answer.

### 3. Findings / Results

In this section, we present the questions (problems 1 and 2) from the exam tests and discuss students' answers investigating misconceptions.

#### 3.1. Problem 1

Sketch the amplitude spectrum and phase spectrum of the signals:

- a.  $x(t)=2\cos(300t)$  where  $t$  is in msec,
- b.  $y(t)=-2\cos(2\pi 100t)$  where  $t$  is in msec,
- c.  $z(t)=A\cos(2\pi f_0 t)+B\sin(2\pi f_0 t)$  where  $t$  in msec.

#### Misconceptions–Comments

The amplitude spectrum of a sinusoidal signal  $x(t)=A\cos(2\pi f_0 t+\varphi)$  is a positive linear vertical segment of height  $A$  at a frequency  $f_0$  and the phase spectrum is a vertical positive or negative segment of height  $\varphi$  at a frequency  $f_0$ .

Here there were a lot of mistakes. A coarse error is that the horizontal axis of frequencies spanned as sec or msec! For example, at the horizontal axis some students (9%) write  $f(\text{msec})$ .

Another mistake regarded the frequency of the signal. For example, for the amplitude spectrum of the signal  $2\cos(300t)$ ,  $t$  in msec, some students (21%) sketch a vertical line segment of 2 at the frequency 300kHz. Obviously, this is incorrect because  $2\cos 300t=2\cos[2\pi(300/2\pi)t]$ , that is, the signal has a frequency of  $300/2\pi = 47,75\text{kHz}$  rather than 300 kHz (which is, actually, circular frequency  $\omega_0$ , in the sense that  $\omega_0=300$  krad/sec).

Another mistake is that some students (36%) sketch a negative amplitude spectrum, for example, for the signal  $-2\cos(2\pi 100t)$ , they sketch a vertical line segment of height -2 at a frequency of 100kHz (which is obviously incorrect), instead of writing  $-2\cos(100t)=2\cos(2\pi 100t+\pi)$  which shows that the signal has an amplitude of 2 (and not -2) and a phase equal to  $\pi$ .

Another mistake is that some students (15%) ignore that  $t$  is in msec and sketch the spectrum in Hz instead of kHz (e.g., for the signal  $-2\cos(2\pi 100t)$ , signal with  $t$  in msec considering that  $f_0=100\text{Hz}$  instead of 100kHz).

An equally serious error is when we ask the amplitude spectrum and phase spectrum of the signal  $z(t)=A\cos 2\pi f_0 t+B\sin 2\pi f_0 t$  ( $t$  in msec). For the amplitude spectrum, many students (52%) sketch two vertical lines of height  $|A|$  and  $|B|$  at a frequency  $f_0$  glued to one another. Evidently, this is wrong – the students should, first, write the signal in the form  $C\cos(2\pi f_0 t+\varphi)$ , with  $C>0$ , and then sketch a vertical line segment of height  $C$  for the amplitude spectrum and a vertical line segment of height  $\varphi$  for the phase spectrum, at the frequency  $f_0$ . For example, for the signal  $\sqrt{3} \cos 2\pi 100t + \sin 2\pi 100t$  (with  $t$  in msec) the frequency is 100kHz, the amplitude is  $C=\sqrt{(\sqrt{3})^2+1^2}=2$  and the phase is  $\varphi=\arctan(-1/\sqrt{3})=-\pi/6$ . Thus, the amplitude spectrum is a vertical line segment of height 2 and the phase spectrum is vertical line segment of height  $-\pi/6$ , both at the frequency of 100kHz.

### 3.2. Problem 2

Find the total energy and average power for the signals:

- a.  $a(t) = 3\sin(2\pi t)$ ,  $-\infty < t < \infty$
- b.  $b(t) = 5e^{-2|t|}$ ,  $-\infty < t < \infty$

#### Misconceptions – Comments

A simple question, which is not answered correctly or not answered at all, is related to the total energy and average power of signals.

The total energy and average power associated with a signal  $f(t)$  (written as a function of time) are defined as

$$E_f = \int_{-\infty}^{\infty} |f(t)|^2 dt \quad \text{and} \quad P_f = \lim_{T \rightarrow \infty} \frac{1}{T} \int_{-T/2}^{T/2} |f(t)|^2 dt \text{ respectively.}$$

For periodic signals, the power  $P$  can be computed using a simpler form based on the periodicity of the signal as

$$P_{\text{Periodic } f} = \frac{1}{T} \int_{t_0}^{T+t_0} |f(t)|^2 dt,$$

where  $T$  is the period of the signal and  $t_0$  is an arbitrary time instant, which is chosen so that the calculation of the integral can be simplified.

Most signals can be classified either as energy signals or power signals in the sense that: Energy signals are signals with finite energy and zero average power ( $0 \leq E < \infty$ ,  $P = 0$ ); power signals are signals with infinite energy and finite average power ( $E \rightarrow \infty$ ,  $0 < P < \infty$ ).

Some students had difficulty in expressing the correct relations of the basic problem and evaluating the integrals. Generally speaking, students had problems in defining the limits of integration of the integrals. In particular, students' reasoning indicated that they had problems in understanding expressions, such as the above, and, as a result, they tended to revert to an over-simplified and incorrect interpretation.

Since  $a(t)$  is periodic with period  $T = 2\pi/2\pi = 1$  sec, we get that its energy is infinite whereas its average power is finite (9/2). This means that it is a power signal as expected. About half of the students (45%) managed to solve the problem. Signal  $b(t)$  is not periodic and has a finite energy, equal to  $50/4$  J, and an average power equal to zero, that is,  $b(t)$  is an energy signal. Only 16% of the students managed to solve this question.

### 3.3. Problem 3

Find the Fourier transform of the signals:

- a.  $e^{-at}u(t)$   $a > 0$ .
- b. The rectangular pulse  $x(t)$  shown in figure 1.

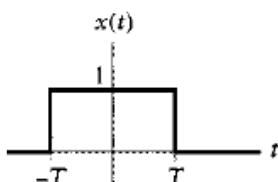


Figure 1: The rectangular pulse

## Misconceptions – Comments

Students had difficulties in understanding Fourier analysis. Several students either wrote the Fourier integral in the wrong way or they had problems in calculating the integral. This is because students are accustomed to taking integrals of functions with analytic expressions. That is, much of the emphasis in their Calculus courses was on finding antiderivatives of functions. When confronted with functions that are described by different expressions in different intervals, they have trouble in appropriately generalizing the concept of integration. Several students (30%) have only a vague notion of the concept of the “function” of Fourier Transform.

Many students (57%) did not manage to find the Fourier transform of the signal  $e^{-at}u(t) \quad a > 0$ .

$$X(\omega) = \int_{-\infty}^{\infty} e^{-at} u(t) e^{-j\omega t} dt = \int_0^{\infty} e^{-(a+j\omega)t} dt = \frac{1}{a+j\omega}$$

Even more students (65%) did not manage to find the Fourier transform of the rectangular pulse

$$X(\omega) = \int_{-T}^T e^{-j\omega t} dt = 2 \frac{\sin \omega T}{\omega} = 2T \frac{\sin \omega T}{\omega T} = 2T \sin c\left(\frac{\omega T}{\pi}\right)$$

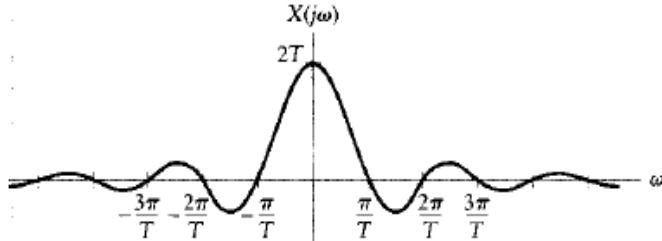


Figure 2: Fourier transformation of the rectangular pulse

### 3.4. Problem 4

The message signal  $x(t)=2\sin(2\pi 10t)$  modulates the carrier signal  $c(t)=3\cos(2\pi 100t)$ , using amplitude modulation.

- Sketch the waveform of the AM signal in the time domain, indicating the maximum and minimum amplitudes as well as the period of the carrier and modulating signals.
- Determine the modulation index of this system.
- Sketch the time domain representation of the DSB, USSB, LSSB signals.
- Sketch the amplitude and phase spectrum of the DSB, USSB, LSSB signals.

## Misconceptions - Comments

Several students (42%) do not sketch the time domain representation of the AM modulated signal. Some of them (15%) sketch a very rough upper envelope, others (9%) sketch the wave form of the carrier signal in a way that it does not reach the envelope. Some students (18%) set the upper and lower envelope of the AM signal but they draw the  $c(t)=3\cos(2\pi 100t)$  carrier ( $t$  in msec) between these two envelopes in a wrong way.  $c(t)$  is a cosine signal with zero phase, that is, it has a starting value of 1 at  $t = 0$ . The period of  $c(t)$  is  $1/(100\text{kHz}) = 0,01\text{msec}$ , that is, equal to  $1/10$  of the period of the signal  $x(t)$ . Therefore, within one period of the message signal  $x(t)$ , 10 complete cycles of the carrier signal have to be drawn, as shown in figure 3.

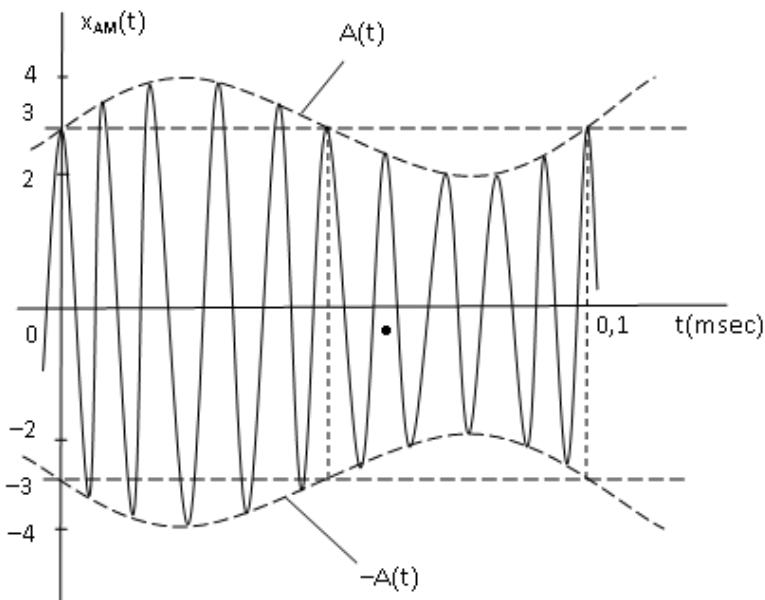


Figure. 3: AM signal

Some students (23%) fail to determine the modulation index  $m$  of the system. They are confused and do not realize that  $m$  is always positive (or zero) and takes values from zero to one (if there is no overmodulation).

Mistakes are also frequent (29% of students) when students are asked to design a DSB signal in the time domain.

We recall that the DSB signal is given by  $x_{DSB}(t)=A_c x(t)\cos(2\pi f_c t)=3 \cdot 2\sin(2\pi 10t)\cos(2\pi 100t)$ . We start by designing  $A_c x(t)=3 \cdot 2\sin(2\pi 10t)=6\sin(2\pi 10t)$ , which will be the first “envelope” of the DSB signal. We continue by designing  $-A_c x(t)$  which will constitute the second envelope of the DSB signal. Among the pulses of the high-frequency carrier  $c(t)=\cos(2\pi 100t)$  lie between the two envelopes (that naturally intersect) as shown in figure 4.

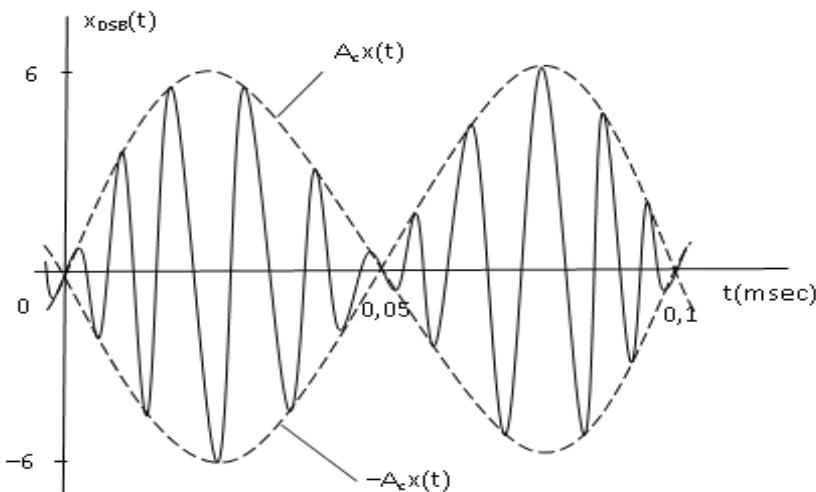


Figure. 4: DSB signal

At positions 0.00msec, 0.05msec, 0.10msec, etc., the high frequency carrier  $c(t)=A_c \cos 2\pi f_c t$  presents phase jumps because at those instants, the signal  $x(t)$  (as the DSB signal is  $x_{DSB}(t)=A_c x(t)\cos(2\pi f_c t)$ ) changes sign. Another frequently observed error occurs when students are asked to design the USSB or LSSB signals in the time domain.

To find the signal USSB, one must sketch the amplitude and phase spectrum of the DSB signal and only keep the upper sidebands. Here, since it is  $x(t)=2\sin(2\pi 10t)2\cos(2\pi 10t-\pi/2)$ , the spectrum of the DSB signal is as shown in figure 5.

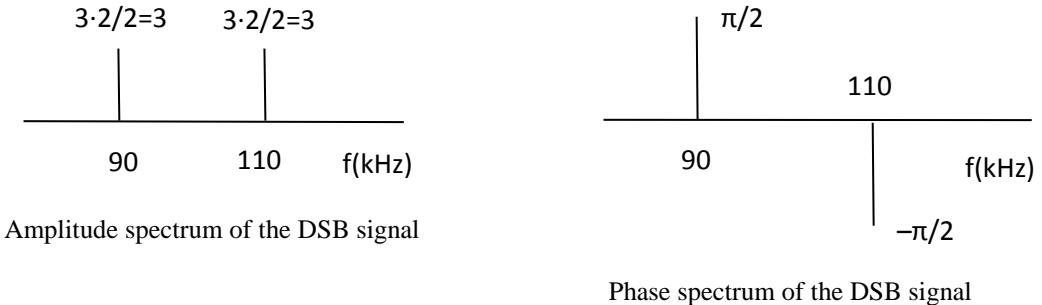


Figure. 5: The spectrum of the DSB signal

Therefore, the amplitude and phase spectrum of the USSB signal is as shown in figure 6.

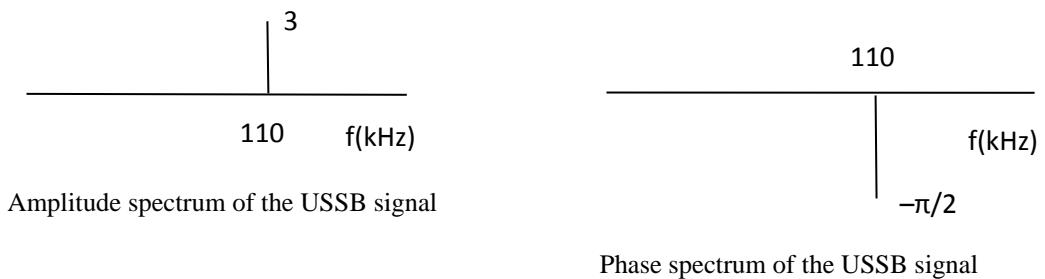


Figure. 6: The spectrum of the USSB signal

The above spectrum indicates that the USSB signal is a sine of frequency 110 kHz, with an amplitude of 3 and phase  $\pi/2$ . Thus, it is  $x_{USSB}(t)=3\cos(2\pi 110t-\pi/2)=3\sin(2\pi 110t)$ , t in msec. The graphical representation in the time-domain is a cosine of amplitude 3 and frequency 110 kHz (figure 7).

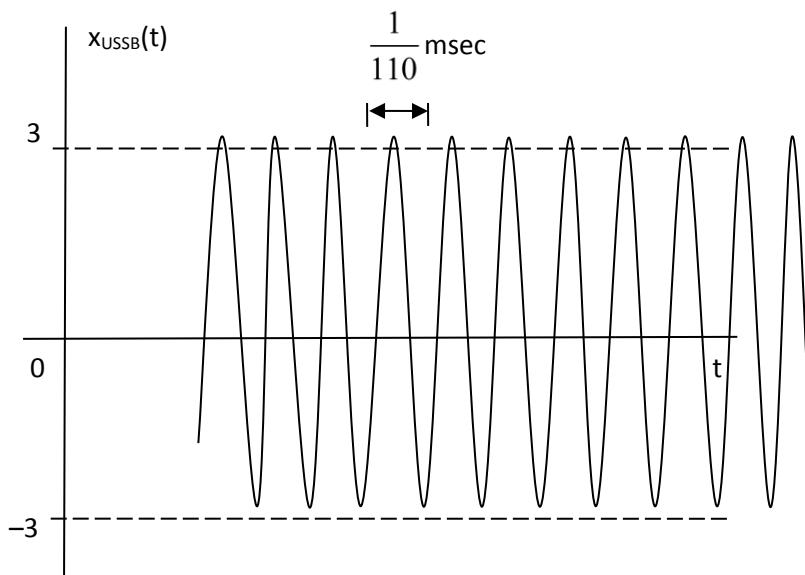


Figure. 7: The signal  $x_{USSB}(t)=3\cos(2\pi 110t-\pi/2)=3\sin(2\pi 110t)$

However, several students (55%) instead of designing the above curve, go to the time-domain graph of the DSB signal and 'cut' the parts of the curve that are below the time axis. In that way, they, actually, perform a "half-wave rectification" in the DSB signal (as shown in figure 8), which is obviously wrong.

Frequent errors (made by 39% of students), also, occur, when students are asked to design a DSB signal in the frequency domain

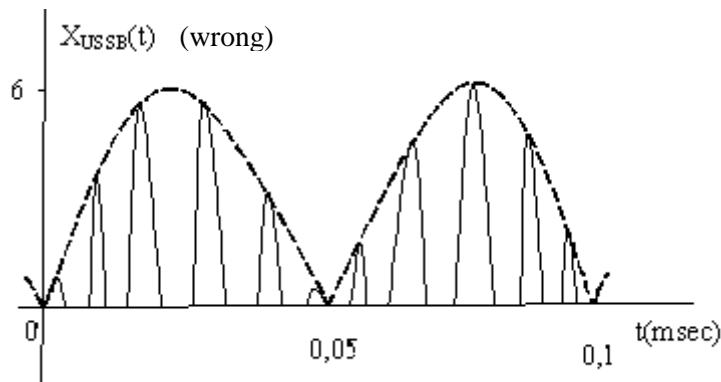


Figure. 8: The time-domain graph of the DSB signal

A similar mistake (55% of students) is made when students sketch the LSSB signal. They go to the time-domain graph of the DSB signal and 'cut' the parts of the curve that are over the time axis. When talking to form upper and lower sideband, mean and work in the frequency domain rather than the time domain.

In most cases, it is not possible to have a mathematical expression and make the graph of the USSB or the LSSB signal in the time domain, even if the graph of the signal  $x(t)$  and the DSB signal is available in the time- and the frequency-domain. For the mathematical expression of the USSB and the LSSB signal, we need to calculate a Hilbert transform, which is rarely possible. Only in special cases, such as the one shown above, we can find the mathematical expression and make the graph of the USSB and the LSSB signal in the time domain.

After defining the above mentioned marking criteria, the six different categories of answers, that is, Scientifically Correct (A), Partially Correct (B), Incorrect (C), Incorrect (D), No-coded (E), No answer (F), we are able to fill in the following table. This table presents the percentages of students' answers to every question in a summarized way that correspond to each category. It is important to notice that categories C and D correspond to students' misconceptions.

**Table 1**  
*Percentages (%) of Students' Answers per Question in Six Categories*

Questions	A	B	C	D	E	F
<i>Problem 1</i>						
a.	26	27	9	21	5	12
b.	12	8	36	15	4	15
c.	10	9	27	25	3	16
<i>Problem 2</i>						
a.	20	25	24	12	4	15
b.	7	9	35	21	5	23
<i>Problem 3</i>						
a.	19	24	37	7	2	11
b.	15	20	27	13	3	22
<i>Problem 4</i>						
a.	25	18	24	18	2	13
b.	35	24	16	7	1	17
c.	6	12	38	17	5	22
d.	11	20	19	20	5	25

#### 4. Discussion

Telecommunications is a subject that requires students to integrate advanced mathematical concepts into their understanding of physical systems with significant portions covering topics that are dealt with as abstract mathematical constructs. Furthermore, much of the material is not known from daily experience at least for students. This unfamiliarity is in contrast to some courses in the physical sciences, such as introductory Newtonian mechanics, in which some understanding of the concepts can be demonstrated without reference to the corresponding mathematical formalism.

Traditionally, many students find it difficult to be successful in engineering, not only due to incompetencies in key subjects (e.g., mathematics) but also due to inexperience that will provide the motivation required to complete the degree. Engineering is typically a rigorous and difficult curriculum for all students, not just for those at risk. Therefore, educational tools and interventions are needed in order to overcome these challenges and enhance learning of material. We argue that an ideal case for supporting student learning and motivation would be to emphasize telecommunications in physical science and engineering curricula. Telecommunications educators and educational researchers need to work together to optimize the motivational opportunities.

The results of this study could help improve student conceptual learning by leading to the development of instructional and active learning teaching material that support students in activating the appropriate cognitive resources and overcoming their misconceptions. Considering the small amount of research on student understanding of telecommunications, this study contributes to the development of effective teaching methods. It is important to find telecommunication concept questions that can be used to actively engage students in lectures. The best concept questions are based on a rigorous understanding of student misconceptions. By carefully designing the distractors of a multiple-choice concept question to correspond to a typical misconception, students are forced to confront their misconceptions and are, therefore, more likely to gain a correct understanding of the concept.

Finally, in a discipline structured module, such as telecommunications, where students are required to integrate advanced mathematical concepts into their understanding of physical systems, it is imperative that we explicitly emphasize the mapping between the mathematics and the physics. This could support students to build a better physical intuition and a more meaningful understanding of telecommunications.

## 5. Conclusion

The results of this investigation support the development of diagnostic tools for assessing student conceptual understanding of telecommunications. The set of misconceptions and the reasoning resources that we have identified in this study provide a valuable research base to develop questions that capture a wider set of student misconceptions. Moreover, based on the identified reasoning resources that students rely on when solving a telecommunications problem, we could derive the possible misconceptions that students might invoke in other problem situations.

We observed that most of the students' difficulties and misconceptions were due to the lack of a proper background in mathematics and physics. For example, we noticed that some students had difficulties in understanding Fourier analysis which, in turn, prevented them from dealing with modulation and transmission techniques in a unified and scientifically sound manner. Other misconceptions were caused by the lack of a well-structured overview of the overall telecommunications subject (and the interrelations between the various telecommunication topics) though such an overview had been briefly presented during the first lecture of the course. On the other hand, awareness of possible misconceptions in telecommunications is expected to help future teachers achieve a better understanding of the telecommunication subject and deliver telecommunications principles to their audience in a more efficient and comprehensible way.

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## ***6.Inservice Teacher Education***

## **6.1. Mentoring and coaching : The example of the Aianteo Primary School and its participation in The Network of School Innovation (N.S.I.) 2008-2011**

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### **Abstract**

*The aim of the present paper is to discuss how coaching and mentoring as important educational practices were put into practice at Aianteo Primary School in Salamina (Greece) and operated within the framework of the collaboration between the school and the Network of School Innovation during the years 2008-2011. My role in this project was that of the school coordinator where I mainly had the role of the mentor. The kind of mentoring we adopted was mentoring for progression, which intends to help experienced teachers to develop their professional aptitude. This process played a crucial role in the school identity and culture encouraging the production of critical discourse on the educational process.*

**Key-words:** Collaboration, professional development and progress, mentoring and coaching, the development of abilities and skills

### **1. Introduction**

Coaching and mentoring are two educational mechanisms that despite being different they often converge and can be used effectively in the educational environment contributing to professional enhancement and development so as to respond and manage the demands of the contemporary work development. Both aspire to develop the best possible practices inside educational environments they are implemented. They both share the principle of developing the participants' abilities and skills so as to encourage and empower their professional confidence (Garvey, Stokes, & Megginson, 2011). They, thus, aim to a Continuous Professional Development (CPD), which allows all participants to continue and advance their skills and knowledge (Bolam, 1993; Foster –Turner, 2006; Hawkins & Smith, 2011; Pachler & Field, 2004). Berrie (2006) describes the difference between the two practices indicating that in comparison with coaching, the Mentor advises in an environment where the participants are free to do what they want, as mentoring is conducted within a flexible but structured framework. On the other hand, the Coach tries to direct the participants towards a specific goal, and, although they have freedom of choice, they end up being guided and evaluated throughout the process according to their performance and effectiveness.

The following table clearly and briefly presents the differences between Mentoring and Coaching (Chartered Institute of Personnel and Development, CIPD, 2004):

Table 1

*Differences between Mentoring and Coaching from the CIPD (Hawkins & Smith, 2006, p. 39)*

Mentoring	Coaching
<i>Ongoing relationship that can last for a long period of time</i>	<i>Relationship generally has a set duration</i>
<i>Can be more informal and meetings can take place as and when the mentee needs some advice, guidance or support</i>	<i>Generally more structured in nature and meetings are scheduled on a regular basis</i>
<i>More long-term and takes a broader view of the person</i>	<i>Short-term (sometimes time-bounded) and focused on specific development areas/issues</i>
<i>Mentor is usually more experienced and qualified than the 'mentee'. Often a senior person in the organisation who can pass on knowledge, experience and open doors to otherwise out-of-reach opportunities</i>	<i>Coaching is generally not performed on the basis that the coach needs to have direct experience of their client's formal occupational role, unless the coaching is specific and skills-focused</i>
<i>Focus is on career and personal development</i>	<i>Focus is generally on development/issues at work</i>
<i>Agenda is set by the mentee, with the mentor providing support and guidance to prepare them for future roles</i>	<i>The agenda is focused on achieving specific, immediate goals</i>
<i>Mentoring resolves more around developing the mentee professional</i>	<i>Coaching revolves more around specific development areas/issues</i>

In the present paper, we focus on mentoring, as it constitutes a process that aims to comprehensively develop a professional and not to merely develop the skills and abilities of a specific field as in the case of coaching (Basset, 2001).

## 2. What is mentoring?

Looking into the existing relevant literature one can find many definitions of mentoring. According to Coleman and Earley (2005), it is a process where a relation is built between two individuals so that one of them can receive supportive, advisory and professional development. Bubb and Earley (2010) believe that mentoring mainly assists, supports and encourages people to search for answers concerning crucial matters for their professional development and improvement. Southworth (1995 in Bush, 2006) claims that "mentoring is the art of listening without judging, enabling without guiding, exploring without directing. The art is the relationship (p.164)". For this reason the characteristics of a mentor are to possess a pleasant personality, be socially accepted and trusted, be helpful and show willingness to be available, have a polite disposition, be discreet, create the appropriate environment for communication and collaboration to flourish and suggest without manipulating (CUREE 2005, Hawkins & Smith, 2011).

As far as Gurvay (2005) is concerned, there are three kinds of mentoring corresponding to the different needs that can arise during different time periods. There is mentoring focusing on newly recruited teachers where the role of the mentor is to guide and advise (mentoring for induction). Mentoring for induction defines that the aim of the mentor is to advise and help the teachers learn how to teach, to deal with classroom discipline problems, lesson plans, and cover the syllabus within the given timetable etc. In the Greek educational system, there have been claims that Mentoring

already caters for the newly appointed teacher (Law 3848, 2010, Article 4), though, in fact, it has never been implemented to the public school.

The second kind of mentoring focuses on more experienced teachers and aims to further develop their professional abilities and skills (mentoring for progression). In this case, the mentor helps experienced teachers to re-evaluate and enrich their previous knowledge and experience so as to understand the philosophy and policies of a new environment-context in order to effectively face the new conditions (Bubb, 2005).

The third kind, which is the object of our study, addresses matters concerning the way educational challenges are faced (mentoring for challenge). Teachers are supported so as to be competent enough to deal with contemporary changes and innovations in an effort to eliminate any obstacles that may hinder their personal and professional progress and development.

### **3. Aianteo Primary School: A collaboration that involved elements of mentoring**

Aianteo Primari School has been situated in a coastal area of the island of Salamina and housed in a modern building complex, which has been sharing with a Secondary School since 2001. It was created when two small primary schools (schools employing two teachers for all the six grades) of the area merged.

In the academic year 2008-2009, the school was fully recruited and employed 12 teachers, 235 students, out of which 40 were of foreign origin. The Network of School Innovation (N.S.I.) was represented at the school by the head teacher and the teachers of the forth and the last grades. When the school started its collaboration with the N.S.I., the fourth grade teacher had already chosen the subject of "Wandering through sea paths" to work with his group, while the students had already been engaged in some of the activities by then. The sixth year teacher had been planning to start a project focusing on journeys but she hadn't come to a final decision yet.

At first, we used distant communication tools, such as the ones provided by the Moodle platform, e-mails or, when necessary, we talked on the phone. After Christmas holidays, the head teacher and the school teachers sent me an invitation to visit the school. There, I started working with the sixth grade teacher and together with her students we discussed and wrote down the pivots that would help them map the journey they intended to focus their research on. Finally, we opted for the topic "A Journey in Europe". Then, after talking with the teacher of the fourth grade we started working together to find the appropriate area for the field research and we ended up choosing the beach closest to the school, aiming at observing and drawing conclusions related to sea orientation, wind direction, the kinds of sea weeds, eutrophication and pollution.

Both projects had a common goal, which resulted from the principles of active learning: the students progressively become from knowledge consumers to knowledge producers of a new learning model. The lesson is designed to promote interaction, experimentation and active participation. The students participate enthusiastically, while a feeling of trust and group collaboration is slowly cultivated. The students progressively acquire self confidence and understand the value of expressing their personal views while at the same time through constructive dialogue they exchange opinions and develop skills of critical thinking (Bierema, 1996; Frost & Durrant, 2003). Within this learning context teachers become facilitators of learning by taking the role either of the coordinator or the co-researcher.

Throughout this collaboration the teachers kept an informal diary where they wrote down their reflections, the stages and steps followed during the implementation of the project. These notes constituted the basis of our ensuing conversations, where we

managed to identify the difficulties and the areas that needed modifications and enhancement by reflecting, interacting, designing and analysing the activities together.

#### **4. Elements of mentoring that emerged in the process of the collaboration**

At the end of our cooperation, I conducted informal semi-structured interviews with the head teacher and the two teachers to discuss the possibility of extending the programme to the rest of the school where other teachers could implement and use similar activities. At the same time, we documented the features of this cooperation and evaluated its effectiveness. It is indicative that within the communicative framework of an interview that allows free dialogue and cooperation and trust with the mentor to be established, discourse production is equally shared between the mentor and the mentees. It becomes apparent that the participants fluently understand, organise, and express their thoughts about themselves, experiences and the school environment (Mishler, 1996). We can, thus, acknowledge that the ensuing life narratives include comments related not only to their feelings about the process, but relevant to what the interviewee describe as: "the emotional, cognitive and evaluative meanings of the situation and the degree of their involvement in it" (Mishler, 1996, p.152). In addition, what comes forth from the interviews is one where meaning acquires a "personal context" that contains both the elements of previous experience and the evaluation of the new experience after mentoring where their role has been empowered.

Looking into the interviews' discussions and what is written in the diaries we can distinguish "subtle" meanings and concepts constructed together with the mentor, and many characteristics of mentoring as they are presented in literature.

##### **4.1. Mentoring as inspiration, exploration and development**

In this case, mentors do not guide and do not manipulate. They try to inspire and empower, encourage individuals so as to discover and finally reveal their inner strengths. Teachers are supported by the mentor in order to face the ongoing changes, innovate and finally to be given opportunities and stimuli for their professional development (Clutterbuck, 2001; CUREE, 2005; Hawkins & Smith, 2011).

The sixth grade teacher indicatively mentions in her interview: "*After the project 'A journey in Europe' I was able to realise the concept of interdisciplinary teaching that resulted in altering my teaching practices...The children themselves designed the journey with the use of thematic spider activities connecting Mathematics, Language, History and Geography in an experiential and effortless way. They made lists with the use of travel guides, used the Internet to book tickets and search for the best offers, and finally managed in two teaching hours to design and plan a real journey. As a teacher, through role alteration, sometimes as a coach and others as a co-researcher I was exposed to various cognitive fields, such as Internet navigation to collect information, and different ways of approaching knowledge. If I had to reflect on this collaborative experience I would choose the following words: opening, trust, comfort, friendly relation, counselling and at the same time encouraging*".

In the final evaluation prepared for the N.S.I. at the end of the school year she wrote: On a personal level, evaluating the whole experience of mentoring helped me to implement some principles, such as the one of co-investigation, apply investigative learning to other school subjects of the curriculum, and, thus, modify my teaching practice.

It is indicative that in the next academic year 2009-2010, the teacher responsible for the school Innovations, took the initiative and started working as a mentor herself by

motivating and supporting her new colleagues who participated in N.S.I. activities for the first time; in doing so she managed to expand her teaching role.

#### **4.2. Mentoring: A trust relation that is progressively built**

An important characteristic of a good mentor is the trust relation that he/she will establish with the mentee, a relation that plays a very determining role. This kind of relation is supported not only by reciprocity but also by an extensive analysis of the emerging needs.

The teacher of the fourth grade typically mentions: *"It was strange to work together with you as I had already been working in environmental programmes and I had experience in designing them. In the beginning, I wasn't sure about your role and feared that you might benefit from the process, or I would have to follow stereotypical behaviour, but later you indirectly opened new horizons by saying: 'Shall we approach it this way?' For me all this played the role of feedback. I recorded everything done and during this process a parent also got involved helping with the video we made with the children in the field research. If I had to reflect on this collaborative experience I would choose these words: feedback, orientation-focus, trust, pleasant and straightforward collaboration.*

It is very important to look into the teachers needs so as to provide the right support for the particular situation-condition aiming to enhance their self-knowledge and the autonomy of the process. Writing down in a diary the difficulties faced and the resulting questions can lead to reflection concerning the educational practices used in a school environment and build a trust relation with the mentor (Bubb, 2007).

#### **4.3. Spreading mentoring in the school unit**

As educational challenges and needs are constantly increasing, the modification of the Continuous Professional Development, (CPD), constitutes a necessity and a priority (Clutterbuck, 2001). According to Pachler and Field (2004), CPD allows us "to rejuvenate practice, to expand our professional repertoire, increase our self-esteem, self-confidence and enthusiasm for teaching or, for example our level of criticality and, thereby, achieve enhanced job satisfaction" (p.2).

Thus, in every school unit there should be trained staff that can effectively face the multifaceted demands and contemporary educational challenges. The school's head teacher has strongly expressed her support of such projects, especially when she realised how the teachers' personal development influences the rest of the group. She says: *"Finally, Mentoring functioned inside the group and was not only individually centered. It is very important, while observing within the school context, to realise the existing financial and social heterogeneity and adapt your teaching practices and approaches. What I witnessed was that promising teachers became more open-minded, which diversely benefited the school unit. It expanded the teacher skills and abilities by empowering their professional identity, a tool by itself.*

### **5. Conclusions- reflections**

What resulted from the case study of implementing mentoring in a primary school was the multifaceted side of this specific educational practice, since its influence did not only affect single personal cases but spread over the whole school unit multiplying its effects by empowering all the teachers. In particular, we can claim that what emerged from the implementation of mentoring practices was the complex demands of the learning process within the context of a school that is undergoing change, a school where its teachers become better at working with change, as they learn to pose

questions, reflect on the role they played within a given situation, readjust their practices and frequently deliberate about educational theories.

Another positive outcome was the teachers' change of mind towards the need for a strong theoretical understanding while they slowly started to realise the limits of empirically learnt teaching practices and were able to better combine theory and research with daily school experience.

What we concluded was that through such a reflective model of support and collaboration the teachers managed to overcome many of their resistances against school changes and the difficulties of contemporary educational practices. In addition, it is important to develop an equal non hierarchical model of interaction, within which the mentees are encouraged by the mentor to identify not only their weaknesses but also their potential to develop skills, design programmes, and set goals inside a field of shared interests.

The roles within an educational community often change; then, guidance takes the characteristics of co- mentoring as "a way of formalizing the mutuality within a mentoring relationship. It implies that both parties are learning and that they are equal partners. The advantage of this more bounded use of co- mentoring means that time is divided equally between the two parties to ensure parity of benefit" (Garvey et al., 2009, p.92-93).

All the above are often related to the demand and utmost need for teacher continuous educational development and are based on a lifelong learning model which, together with mentoring, helps them cope with constant changes of the social and educational context. The relation between the mentees and the mentor allows them to develop critical thinking so as to become more creative, be able to renew their practices, enlarge their professional knowledge, while, at the same time, they can improve their self-awareness, confidence and enthusiasm for teaching (Bubb & Earley, 2007). We should also mention that these practices contribute to the creation of a school culture that perceives the school not only as an institution that only develops its conventional areas but also as the place where the participants can influence it by their own values, beliefs, models and rules. It is of crucial importance to understand how to manage, if needed to alter personal views by sharing and constructing common notions and how all the above influence the composition of the school. The mentor's role can be decisive in this process, which is usually mediated through the symbols and rituals of the school culture, exhibiting the formal, traditional function of the school as an institution, a process that can shed light on the invisible parts of the school and reveal their effects better (Bush & Middlewood, 2005).

Thus, through all the steps and stages of mentoring what also surface are the values and ideologies ingrained in the heart of the school as an organism, which constitutes an object of process, negotiation and rethinking. Sharing all the above can result in the creation of a school culture that can be cohesive and, at the same time, sensitive and tolerant in order to include and understand the particular and different identities of its members.

We indicatively present the following comments of the head teacher: *"A very important element was how everything spread in the school unit. The relation among the professionals and their group cooperation, in particular, is not self-evident within the culture of a school function. These processes result into strengthening the team and developing collaboration. At the same time, through these practices the teacher's professional identity is constructed. The Mentor's presence at school is necessary, while you get to know the other and develop a personal relation that cannot be replaced*

*by electronic communication. It is a necessary and permanent role having advisory and intervening dimension, a "critical friend", a collaborator of the school unit".*

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## **6.2. The importance of teachers' mastery goal orientation and autonomous motivations for their professional development and educational innovation**

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### **Abstract**

*Teacher motivation quality is essential for in-service training success and the implementation of innovative teaching practices. Recent theory-driven research supports that achievement goals and self-determination theories can credibly reflect teacher motivation quality and jointly provide a reliable framework to effectively design professional training programs/interventions to promote innovative curricula. This approach focuses on the formation of the optimum educational/work environment in which teachers' mastery goal orientation is cultivated and their autonomous motivation is enhanced. Theoretical and empirical evidence suggests that for sustained and effective educational innovations school/work climate should support teachers' personal improvement and fulfill their innate psychological needs for autonomy, competence and relatedness.*

**Key-words:** Achievement goals theory, self-determination theory, in-service teacher training, innovative curricula

### **1. Introduction**

Teacher motivation is an integral part of their work-related behavior and influences student achievement (Richardson & Watt, 2010). During the last decade research addressing not only quantity but also quality of teacher motivation has gained momentum (e.g., Butler, 2007; Papaioannou & Christodoulidis, 2007), while scholars point out the need for more systematic theory-driven research (Richardson & Watt, 2010). Recent evidence supports that teacher motivational qualities exhibit variation across work tasks (Fernet, Senecal, Guay, Marsh, & Dowson, 2008), and/or occasions (Praetorius et al., 2014), emphasizing the need for research investigating motivation at the situational level. Indeed, it seems plausible that a teacher who is optimally motivated towards teaching with traditional methods may be less motivated towards other work tasks, such as in-service training or innovative instruction.

Therefore, if policy aims to promote teacher professional development or innovative curricula implementation, it is prerequisite to understand and efficiently interpret teacher work motivation across these specific situations/tasks. Recent findings suggest that teachers' motivation quality is essential for in-service training success and the implementation process of innovative teaching practices (e.g., Abrami, Poulsen, & Chambers, 2004; Cave & Mulloy, 2010; Van Eekelen, Vermunt, & Boshuizen, 2006).

Following these propositions, we review recent theory-driven research examining teacher optimal motivational qualities and we present it in combination with our findings relative to teacher motivation and educational innovations in Greece.

### **1.1. Theoretical framework**

Two well-established motivational theories, which can be used complementary (e.g., Butler, 1989; Ryan & Deci, 1989), were deemed appropriate to guide our work on teacher quality of motivation across situations. These are Achievement Goals Theory (AGT) (Elliot & Church, 1997; Nichols, 1984) and Self-Determination Theory (SDT) (Deci & Ryan, 1985, Ryan & Deci, 2002). According to these theories, only optimal motivation of high-quality can produce sustained favorable outcomes in human behavior, affect and cognition. AGT based research support that mastery/learning goal orientation (i.e., the pursuit of personal improvement) is the most beneficial individual predisposition across a variety of achievement situations, whereas, according to SDT research, the most optimum type of motivation across life domains and contexts is autonomous/self-determined motivation (i.e., intrinsic, integrated and identified regulations).

## **2. Theory-driven research findings on teacher motivational qualities**

### **2.1. Teachers' mastery goal orientation**

Educational research suggests that teacher mastery/learning goal orientation in contrast to performance goal orientations (approach and avoidance) has the most positive impact on various aspects of the educational procedure. More specifically, with regard to teacher-related variables, empirical findings suggest that mastery oriented teachers present higher levels of job satisfaction (Papaioanou & Christodoulidis, 2007; Skaalvik & Skaalvik, 2013), positive perceptions and behaviors of help seeking (Butler, 2007; Nitsche, Dickhäuser, Fasching, & Dresel, 2011), engagement (Parker, Martin, Colmar, & Liem, 2012; Skaalvik & Skaalvik, 2013), didactic, educational and subject-specific interest (Paulick, Retelsdorf, & Möller, 2013; Retelsdorf, Butler, Streblow, & Schiefele, 2010), adaptive coping strategies towards work threats-challenges and reduced burnout (Parker et al., 2012; Retelsdorf et al., 2010), reduced occupational strain, positive attitude towards further training and attended training workshops (Nitsche et al., 2013), and higher levels of self-efficacy (Cho & Shim, 2013; Hoffmann, Huff, Patterson, & Nietfeld, 2009; Nitsche et al., 2011). Additionally, with regard to instruction-related variables, mastery oriented teachers provide higher levels of support for students' question asking, help seeking and reduced inhibition (Butler & Shibaz, 2008), use more mastery-oriented practices and cognitive stimulating instruction (Butler & Shibaz, 2014; Retelsdorf et al., 2010), provide higher school mastery goal structure (Cho & Shim, 2013) and lower performance goal structures (approach-avoidance)(Dresel, Fasching, Steuer, Nitsche, & Dickhäuser, 2013), utilize more individual and less social reference norms (Retelsdorf & Günther 2011), have students with higher levels of interest and lower levels of cheating (Butler & Shibaz, 2008; 2014). Accordingly, in the Greek school it has been found that teachers' mastery goal orientation is positively associated with their involvement in extracurricular activities (e.g., reading, training, preparation), higher levels of self-efficacy and self-determination at work (Christodoulidis, 2004; Gorozidis, 2009).

### **2.2. Teachers' autonomous motivation**

In a similar vein, SDT based research shows that teacher autonomous versus controlled motivation is positively connected to a better psychological functioning, a host of positive cognitions and behaviors influencing educational process. More specifically, with regard to teachers' psychological well-being, it has been found that autonomous motivation is positively related to job satisfaction (Christodoulidis, 2004; Gorozidis, 2009), job control and personal accomplishment, reduced emotional

exhaustion and depersonalization (Fernet, Guay, & Senecal, 2004; Roth, Assor, Kanat-Maymon, & Kaplan, 2007), better adjustment to job demands and coping with burnout (Fernet et al., 2004). Moreover, it has been found that teachers' self-determined types of motivation were positively associated with students' achievement and engagement (Demir, 2011), students' autonomous motivation to learn (Pelletier, Séguin-Lévesque, & Legault, 2002; Roth et al., 2007), the promotion and support of students' autonomy (Pelletier et al., 2002), the use of student-centered teaching styles (Hein et al. 2012), higher level of confidence in teaching the national curriculum (Lam, Cheng, & Choy, 2010; Wang & Liu, 2008), more positive-less negative attitudes towards innovative teaching (Lam et al., 2010). Similarly, in the Greek context, teachers' self-determined behavioral regulations were positively linked to higher degree of implementation of a newly introduced curriculum and positive intentions to implement it in the future, higher involvement in extracurricular activities (e.g., reading, training, preparation), higher levels of teachers' self-efficacy and mastery/learning goal orientation (Christodoulidis, 2004; Gorozidis, 2009).

### **3. Theoretical & empirical suggestions**

The broad theoretical framework together with empirical evidence mentioned above, imply that when an educational/work environment cultivates teachers' mastery goal orientation and supports their autonomous motivation, eventually it will promote teacher professional development (e.g., training participation) and the adoption of educational innovations in the most optimum level (Figure 1).



*Figure 1. Theoretical & empirical suggestions*

To investigate whether these assumptions apply to the Greek context during recent educational reform efforts, we have conducted four studies (see Gorozidis & Papaioannou, 2011, 2014, 2016). More specifically, our studies focused on two main questions:

- a. What motivates teachers to participate in training promoting educational innovations?
- b. What factors are associated with the implementation and continuation of educational innovations?

By efficiently answering these questions founded on a solid theoretical ground, one can generate suggestions/guidelines for policy makers on how to effectively improve current practices.

## 4. Teacher motivation across educational innovation relevant tasks

### 4.1 Teacher motivation to participate in training

Teacher motivation to participate in training promoting innovative curricula was investigated both qualitatively and quantitatively. In a study with 218 participants, it was found that teachers took part in an optional training program, primarily for autonomous reasons (intrinsic, identified regulations) and in a much smaller extent for controlled reasons (introjected, external regulations). This finding was evident both in teachers' personal statements and their responses in valid questionnaires. In addition, the analysis of longitudinal data of 71 participants from this study revealed that autonomous contrary to controlled motivation predicts positively teachers' future intention to participate in similar training (Gorozidis & Papaioannou, 2014). Further evidence from two cross-sectional studies with three independent samples of educators (191 secondary school, 85 Physical Education, PE, and 52 pre-service PE teachers) showed that mastery oriented teachers present higher levels of autonomous motivation while performance approach and avoidance oriented teachers present higher levels of controlled motivation (Gorozidis & Papaioannou, 2012, 2016)(see Figure 2).

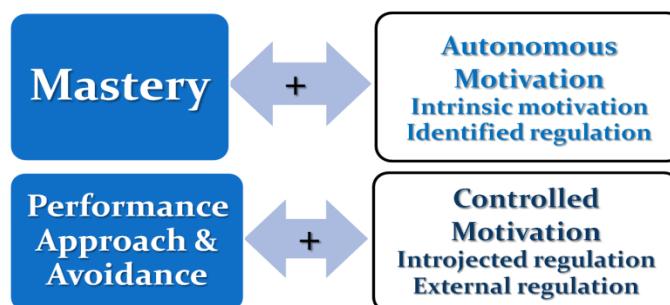


Figure 2. Achievement goals ↔ Motivation to participate in training (Teachers, n=191; PE teachers, n=85; pre-service PE teachers, n=52) (Correlations; p<.05)

In light of these associations, multi-group structural equation modeling, across different conditions of teacher recruitment (optional vs. mandatory), revealed that mastery goal orientation can predict autonomous motivation while performance avoidance goal orientation can predict controlled motivation to participate in training invariantly (Gorozidis & Papaioannou, 2016, Study 1).

### 4.2. Teacher motivation to implement innovations

Teacher motivation to implement innovative curricula was examined quantitatively (in three cross-sectional studies) with teachers having implemented innovation in their schools. Firstly, path analyses were conducted on data collected from 290 PE teachers. The results of these analyses supported that only mastery goal orientation consistently and positively predicts both higher level of innovative curriculum implementation during last year and teachers' intentions to implement it next year through mediating variables of self-efficacy. On the other hand, while performance approach goal orientation was found to predict previous years' curriculum implementation through self-efficacy variables, it had no connection with teachers' intentions to implement innovation in the future (Gorozidis & Papaioannou, 2011). Secondly, it was found that only autonomous motivation to teach (in contrast to controlled motivation) can predict teacher intentions to future implement innovation (n=71; Gorozidis & Papaioannou, 2014). Thirdly, it was evident that only mastery goal orientation positively predicts (indirectly) teacher intention to implement innovation next year through the mediating variable of autonomous motivation; whereas only performance approach goal

positively predicts controlled motivation to teach innovation but not intention to continue implementing innovation in the future (n=140; Gorozidis & Papaioannou, 2016, Study 2).

### **3. Discussion**

All this evidence supports the notion that the success of the educational procedure depends on the presence of highly mastery oriented and autonomous motivated teachers. These high-quality optimally motivated teachers have the potential to thrive in a variety of situations relevant to educational innovations. Consequently, the main focus of policy makers should be the formation/creation of the appropriate educational work environments that cultivate teachers' mastery goal orientation and enhance their autonomous motivations. Literature review in joint consideration with our findings suggest that the motivational theories of achievement goals and self-determination may provide a solid framework to optimally design professional training aiming to promote teacher learning and innovative curricula implementation. Ideally, this environment must foster teacher goal for personal development and must fulfill teacher innate psychological needs for autonomy, competence, relatedness to lead to higher levels of self-determination (Cho & Shim, 2013; Janke, Nitsche, & Dickhäuser, 2015; Lam et al., 2010; Nitsche, et al., 2013; Schellenbach-Zell & Gräsel, 2010; Gorozidis & Papaioannou, 2011, 2014, 2016).

Mastery goal orientation can be fostered through the formation of a general educational philosophy reflecting a mastery motivational climate (a) emphasizing personal improvement, effort, and persistence with revised teaching practices, (b) delivering opportunities for constant experimentation accompanied by corrective non-threatening feedback, and (c) promoting autonomous motivation (Janke et al., 2015). In addition, the need for autonomy can be satisfied in school contexts which provide (a) meaningful rationale and convincing explanations for the need to reform/change old pedagogies, (b) choices to the teachers to actively shape reforms, and (c) options to customize their training programs according to their needs (Armour & Yelling, 2004; O'Sullivan & Deglau, 2006). Competence need can be fulfilled through fostering teacher self-efficacy (Bandura, 1997), which can be achieved by (a) observing other teachers implementing innovations (vicarious experiences), (b) having successful teaching experiences by implementing and testing innovative practices (mastery experiences), and (c) receiving appropriate feedback, guidance and support from experts, officials and colleagues (verbal persuasion) (Deglau & O'Sullivan, 2006; Kulinna et al, 2008; Martin et al., 2008, 2009). Finally, relatedness need satisfaction can be achieved through cooperation-collaborations with experts, officials and colleagues. It seems that a wise and effective strategy is the formation of teacher networks or professional communities of practice/learning, where sustained reciprocal communication is supported with frequent exchange of ideas, solutions and experiences between participants (Cochran-Smith & Lytle, 1999; Deglau & O'Sullivan, 2006; Lieberman & Miller, 1999).

Interestingly, these practices are quite different from the most frequently implemented policies worldwide. For instance, top-down reforms and one-shot teacher training is a common tradition to introduce educational innovation. In many educational systems, innovation and training are promoted in a controlling manner with the provision of external incentives and coercion (Eurydice, 2013). Accountability systems and high stakes policies are implemented globally in ways that induce social comparison and promote teachers' performance goal orientations. However, according to our theoretically and empirically supported reasoning, it is likely that all these

practices/strategies lead to decreases in teachers' quality of motivation resulting in superficial and temporary educational outcomes.

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### **6.3. Teacher education on Human Rights**

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#### **Abstract**

*This paper deals with the issue of teacher education for Human Rights in Greece. In particular, the survey was conducted with the ultimate aim to collect data on the implementation of human rights education in Greek schools. Furthermore, through these data, we sought the practices applied to the teaching of human rights. As regards the results of the survey, they showed the weaknesses of the Greek education system to promote human rights. These weaknesses largely appear to be due to a lack of compulsory courses on education rights in Greek pedagogical departments and the lack of good information - training of practicing teachers.*

**Key-words:** Human rights, education system, teacher training

#### **1. Human rights and education**

In the Universal Declaration of Rights of the United Nations Human 1948 the great value of education and training was first formulated to promote a global culture of human rights (Lenhart, 2006). The introduction of universal rights must be understood as a learning process involving different perspectives and traditions, which, nowadays, come under criticism (Ignatieff, 2002). The discussions on human rights and education are in constant with interdependence. In this context, education and training are considered to be a key instrument for promoting the foundation of human rights, while respectively human rights provide important impulses to realize an equal and equitable access to quality education, on which substantial development and "the full development of the human personality" depends (Universal Declaration of Human Rights, Article 26). The right to education is first closely linked to the quality of education and secondly to avoiding and preventing discrimination, violent attitudes and behavioral patterns resulting from social and cultural construction of difference and adoption of overvaluation of "my own" and devaluation of "other" (such as racism, sexism, gender discrimination etc) (United Nations General Assembly, 2011).

#### **2. Associated Schools Project-ASPNET**

The Associated Schools Project UNESCO (ASPNET) was founded in 1953 and started with thirty secondary schools in fifteen member states. Today it was conducted in about 179 countries. In the context of the ASPNET, Greek National Committee of UNESCO has developed a network that currently comprises 150 educational units,

which come from all educational levels and from all over Greece. The program of each school lasts for 1-2 years (Pantazis, 2013).

UNESCO recognizes as ASPNET these schools, which seek to achieve the objectives of UNESCO in schools. The training in the Associated Schools UNESCO should promote a "culture of peace". Landmarks of work considered human rights, the promotion of tolerance and democracy, intercultural learning, the environment and global development (Müller, 2001). One of the major axes of teaching in the Associated Schools UNESCO was originally human rights, because it was recognized that education for peace is linked with human rights education. The convergence of the Movement of Clubs and the Associated Schools is not exhaustive. Whenever possible, cooperation, joint action and mutual stimulation strengthen initiatives and facilitate wider dissemination of the spirit of UNESCO.

### **3. Methodology of the survey**

In the Greek area, as shown by a thorough review of the literature, no studies were identified (quantitative or qualitative), which investigated teachers' knowledge and attitudes to human rights education. Consequently, the present study should try to fill this gap in the research field, while formulating recommendations for appropriate ways of integration and implementation of human rights education in the Greek educational system. The empirical part of this study pursues two objectives. Firstly, the aim is to collect data on the implementation of human rights education in Greek schools and secondly to highlight the important practices for teaching human rights.

To achieve the targets, a questionnaire was used to collect information from the Greek and the international literature, particularly (Batarilo, 2010; Müller, 2001). This research was carried out during 2010-2011. Consequently, wherever the questionnaire mentions the period "in the past two years," it roughly refers to the period 2008-2010. The number of Associated Schools UNESCO is 11 schools, while the number of comparing schools (Non Associated Schools UNESCO) is 12 schools. Therefore, the total number of schools that participated in the survey is about 23 schools. Regarding the size of the survey sample, one hundred forty-three teachers of all educational levels (elementary, junior high and high school) participated; seventy-four of them were employed in the Associated Schools UNESCO and the remaining sixty-nine to Non Associated Schools UNESCO and agreed to take part in the survey by completing the questionnaire voluntarily. A total of 150 questionnaires were completed, while 143 questionnaires returned, which means that the response rate of 95.3% is very satisfactory.

## **4. Results**

Based on the results of research and literature review, we were led to a detailed record of results. However, in this paper we will briefly record the main results of the research in order to present a complete picture of human rights education in Greek schools.

### **4.1. Human rights in school**

The efforts to implement human rights education in the Greek educational system are not intensive. There is a large gap between the expectations of the international organizations for the implementation of human rights education and reality. According to the results of the research, training in human rights can be a potential for individual teachers with a strong interest in human rights, but it seems that it does not develop the whole school community. At the school level, the lack of legislation on human rights

education means that there is no clear mandate for teachers to implement human rights education in their school.

An effective human rights education in schools is influenced by a culture of human rights, which includes not only the school community but also the local community. The human rights education should be linked to specific references from the daily lives of those involved. Human rights must be experienced in school. The localization of the gap between expectations and reality in Greece is not a new problem but problem areas are identify in the entire educational system.

Schools UNESCO seek to achieve the objectives of UNESCO. An important goal is to promote the idea of human rights through education. This effort was clearly pronounced in the UNESCO Schools, which shows clear differences in interdisciplinary and extracurricular activities on human rights when compared to Non Associated Schools UNESCO. The deposits of teachers clearly show that UNESCO Schools clearly promote human rights education when compared to Non Associated Schools UNESCO. A larger proportion of teachers in Non UNESCO Associated Schools positively answered to the question if there were available teaching materials in schools. However, a large proportion of teachers in both categories do not know how to answer this question. Schools UNESCO should have more material available. The effort of UNESCO to provide support for teaching material (apart from seminars, conferences, etc.) does not seem to be fulfilled.

Despite differences between the UNESCO Schools and Non-UNESCO Associated Schools, it should also be noted that there are only small numbers of teachers in UNESCO schools, who assess the extensive school activities as minimal. Consequently, there is still much room for further intensification in UNESCO schools. Nevertheless, the projects in UNESCO Schools play an important role in activities. This preference is reflected on the results of the methods of human rights education. Through the project pursue an action- oriented opening and networking of schools is promoted. Moreover, interdisciplinary and extracurricular activities with a direct or indirect approach to human rights education hold a prominent place.

This study held that the recognition as a School UNESCO and the increased activities related to human rights education could have an impact on other school parameters. They investigated the collegial communication, teachers' interdisciplinary collaboration and school atmosphere. The answer to the question: "How is the communication between teachers and the schools surveyed?", is that in both cases (UNESCO and Non UNESCO) teachers overwhelmingly responded that they communicate well together with slightly better communication levels in Schools UNESCO. It is important that no teacher of both categories give the answer "no communication" and only 4 from 139 answered "somewhat poor communication."

The answer to the question: "How is the interdisciplinary collaboration of teachers together?" is that in both cases (UNESCO and Non UNESCO) teachers overwhelmingly responded that they work well together with slightly better levels of cooperation in Schools UNESCO (77,5% versus 69,1% in Non UNESCO schools). In this case, no teacher (both types of schools) gave the answer "no cooperation" and only a total of 11 (out of 139 in both categories) answered "rather meager cooperation". Furthermore, the answer to the question "How is the atmosphere within the club teacher?" is that in both cases, the vast majority of UNESCO and Non UNESCO teachers replied that the atmosphere remained good with slightly better levels of cooperation in Schools Non- UNESCO (86,6% against 83,1% in Schools UNESCO). Moreover, no teacher of both categories of schools gave the answer "very bad atmosphere" and only 2 in total (from 138 in both categories) answered "rather bad

atmosphere." The conclusion from the three questions above is that teachers have well to very good relations between the independent school class they serve.

#### **4.2. Teachers**

The results of this study show that teachers pay attention to human rights education in school. Based on their replies to the question: "have you addressed issues related to human rights education in your classes in the last two years?", it was found that they have largely addressed issues concerning human rights education with a relatively higher percentage in Schools UNESCO (66,7% compared with 61,54% in Non-Associated Schools UNESCO). Also, teachers on average assess the importance of human rights education at school positive. More specifically, educators working in schools UNESCO and those who work in Non Associated Schools UNESCO believe that human rights education in school is relatively high or very important for their realization.

However, the answer to the question: "Which role has been extensively played by human rights education in schools surveyed in the last two school years?" is that teachers working in UNESCO Schools attribute great importance to human rights education, while those working in Non Associated Schools UNESCO attribute no importance to human rights education (30,3%). No teacher of both categories of schools gave the answer "a very great role".

Teachers perceive human rights education differently. Based on their answers, most of the teachers understand the concept human rights education as providing education, respect and safeguarding of human rights. For this reason, based on the empirical results, a distinction is made into "direct human rights education", "indirect human rights education" and "training on human rights issues" (Müller, 2001). It is worth noting that there is almost no reference indicating the role of emotions in human rights education. The focus is on cognitive and action-oriented ways, although the education of values encompasses emotional components.

Half of the teachers believe they have moderate knowledge of human rights even when serving in Schools UNESCO. The answers to the question: "What would you consider to be the sources from which you acquired your knowledge of human rights?" is that the most popular sources of information are newspapers / magazines, Radio and TV. Therefore, teachers are not trained to systematically promote the human rights education. The acquisition of knowledge and the development of skills for human rights education depends on teachers' will. The teaching of human rights and the direct negotiation of the Articles of the Universal Declaration of Human Rights seem to be the school deficit currently. However, according to teachers' suggestion, to improve the human rights education systematic engagement in parallel actions, organizing workshops and teacher training, informing students and participating in discussions.

We observe that even a relatively small proportion of teachers working in schools UNESCO and Non Associated Schools UNESCO are active for the observance of human rights. On the other hand, educators show a great awareness of the protection and respect of their rights and the rights of others. Moreover, teachers are able to describe violations of human rights during the school day.

##### **c) Methods for Human Rights Education**

Characteristic of a democratic climate in school is the use of participatory and interactive teaching methods. The positive is that they apply in the context of the activities of human rights education and students are encouraged to actively participate and discuss. We should be positively assessed according to the testimonies of teachers to apply interactive methods. Among 15 methods teachers of UNESCO Schools

revealed the answer "Conversations" as the most popular with a share of 92,1% i.e. almost all included in their responses and "Interactive Teaching" with 85,7%. Here the "Working with textbooks" and "Collective Operations". The results found a wide preferably in the method «Project» by 62%.

The least popular answer is "Frontal teaching" with a percentage of 50,8%. The frontal teaching is not considered according to the testimonies of teachers as highly effective, since the included in their responses only half teachers. At this point it remains open whether the frontal teaching actually reported directly to human rights remained ineffective or whether human rights play specifically during lessons a minor role. Also, for the most part (73,7%) teachers have not applied a method which will not be repeated because of bad experience.

#### **4.3. Contents Human Rights Education**

Everyday communication regarding the respect of human dignity of others is regarded important. While special emphasis is placed on the importance of the daily reporting of the contents of human rights education, it is clear that purely cognitive important contents from the area of institutions are considered to be rather less important. In particular, we note that the most popular answers of teachers of UNESCO Schools are: "Human Rights in My Life" (98,4%), the "Respect the rights of others" (96,9%) and "Tolerance towards others" (95,3). The least popular answer is "Preserving peace" (only 14,1%). All three answers are considered important contents within the framework of education on human rights and can be directly related to the lives of male and female students. The low reporting rates in the Rights of the Child is remarkable. Given that thousands of children are victims of human rights violations it would be desirable to put greater emphasis on the Rights of the Child. This probably would allow the identification of students with the victims. Considering the above results it can be stated that human rights education as a whole is gaining ground, especially in Schools UNESCO. The proven efforts of these schools and the teachers' high awareness of human rights education have a positive effect. Nevertheless, the human rights education in Greek schools should be promoted by all.

### **5. Conclusions**

The school can help to achieve these objectives. This study describes some guidelines to be followed for the successful integration of human rights education in the Greek educational system. These proposals are necessarily fragmentary, because the investigation of human rights education at all levels of education is still at an early stage. The integration and application is necessary. This, of course, cannot be achieved without education, political will and the financial and human resources. Beyond the teaching context of human rights education it is crucial to promote specific educational policies:

- In principle, there should be policy decision on inclusion and promotion of human rights education in primary and secondary education on the part of the Ministry of Education.
- Curricula should be developed that will incorporate education on human rights as well as relevant textbooks and teaching materials that will have the support of the Ministry of Education.
- The Pedagogical programs should be developed by "experts" of School Education.
- The human rights education should be a compulsory subject at the University Pedagogical Schools.

- In the field of non-formal education, programs for human rights education (such as workshops, training programs for trainers, etc.) should develop, so that people, especially young people who have left the formal education sector, can become familiar with programs on human rights.
- The Ministry of Education should establish a National Coordination Agency for human rights education. In the Declaration of the United Nations Decade of Education for Human Rights (1995-2004) this service is considered to be essential.

The school area offers many opportunities and stimuli which can transmit values and principles of human rights, develop critical faculties and promote social participation. The social, cultural and economic changes in Greek society, especially the last two decades due to the immigration, the plurality of family forms and lifestyle and demographic changes require from school, more than ever, to lay the foundations for political maturity, social inclusion and cohesion based on the values of the Universal Declaration of Human Rights. Thus, the school can become a place that promotes the development of a "culture of human rights". This can be accomplished in two levels (Batarilo, 2010; Müller, 2001):

A) The human rights education requires not only focus on the national level, but inclusion of the requirements and obligations under the international system of human rights protection. Therefore, it is considered necessary to cooperate with non-governmental organizations and carry out discussions with other countries.

B) Human rights refer to both the morality and law. If we overlook their moral content, they appear in the form of legal rights. Like the moral norms, human rights refer to anything that has a human face, but as legal norms protect only individuals provided that they are members of a particular law society, as are normally the citizens of a nation state. Human rights are presented in the form of subjective rights and ensure the margins of freedom, in which no one is obliged to justify public for the acts and omissions. Unlike what happens in moral obligations, they do not exceed the rights, because the legal obligations arising through the mutual delimitation of recognized freedoms, they always talk about human rights and not human obligations.

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## **6.4. Teacher influence on promoting and impeding learner autonomy in young learners**

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### **Abstract**

*Classroom contexts are critical environments, since they provide various opportunities for the teacher to assist the learner in the fostering of autonomy. The present study aims to explore three different kinds of influences taking place within the structuring of an autonomy supportive classroom environment for young learners. The first influence is based on the teacher's motivational style. The second influence relates to classroom events in terms of affordances and the influence of autonomy dependent of the teacher's offering choice of activities. Finally, external events, such as conducting alternative assessment, are covered.*

**Key-words:** Learner autonomy, young learner, classroom environment, teacher training

### **1. Introduction**

For decades learner autonomy has been addressed by many researchers. However, an investigation of the literature reveals that the concept of learner autonomy in young learners lacks the same popularity. Therefore, as an attempt to address this gap, the present research is a review article attempting to investigate from various perspectives how teachers within the context of the classroom can be influential in developing the learner autonomy of young learners- notably within the classroom. Classroom settings are critical components in the fostering of autonomy because they provide the setting for the teacher and the learner to relate to one another and, thus, develop their relationship, which can either promote or impede the learner autonomy.

The concept autonomy, ever since its inception has received much debate in the field of learning/teaching research in terms of anticipating various interpretations and definitions and also in terms of its place in education. However, due to the teacher-learner nature of the present study, the present researcher undertakes the perception of learner autonomy where learner autonomy is gained based on the relationship between the learner and the teacher. In this sense, in educational institutions the classroom contexts are the environments where it is possible for the teacher to assist the learner in the fostering of autonomy.

The present study is a review article based on the identification of how the teacher can be influential during instruction attempting to provide practical examples from various perspectives that can guide and form a basis for teachers who want to foster young learner autonomy within their own classroom environment. Throughout the study, the potential value of autonomy supportive teachers is underlined, while examples of pedagogical research relevant to the consideration of the varying extents to which it is plausible for the teacher to develop young learner autonomy are provided. Along these lines, this study aims to investigate the following three research questions relating to the structuring of an autonomy supportive classroom environment for young learners: 1) Can the teacher's motivational style have an impact on the autonomy development of the young learner? 2) Within the classroom setting combined of

affordances, can the teacher's offering a choice of activities influence the autonomy of the young learner? 3) Is it possible to foster learner autonomy through external events, such as conducting alternative assessment?

## **2. Teacher influence on fostering autonomy**

While conceptions of autonomy were frequently dealt with in a learner-centered manner, at present it is possible to observe a reverse manner. Recently, conceptions of autonomy in learning have radically changed by shifting the emphasis on the influence of the classroom teacher. According to Little (1997), "autonomy has become an explicit educational goal. As such, it embraces two complementary focuses of concern: (1) the complex of knowledge and skills that constitutes the aim of learning; and (2) the processes by which that knowledge and those skills are acquired....The explicit pursuit of autonomy in formal educational contexts is thus a matter both of learning and of learning how to learn" (p. 94). As a result, it is the duty of the teacher to teach the young learner how to learn.

Having recognized the teacher's importance in the enhancement of the learners' capacity for autonomy, Little (1997) investigated language awareness in learner autonomy in relation to child development according to the 'Zone of Proximal Development', a concept that was described by Vygotsky (1981) as "the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers (as cited in Little, 1997, p. 95). Little (1997) states that this concept explicitly assumes that development or learning is complete only when the child or learner is autonomous. Since the aim of education is not only to learn but also to learn how to learn, the child must develop autonomy so that s/he can be independent of peers or adults in the future.

Considering the view that learning is a part of life, then formal learning starting within the classroom context at early childhood would be one of the most crucial periods necessitating the teacher's support not only for the child's intellectual development but also for "a balance that steadily builds the child's regulation of his or her own behavior (DeVries & Zan, 2003, p. 64)." At this point, if we consider the constructivist point of view in terms of the work of Jean Piaget (1932/1965), perhaps within this balance we could include the teacher's working on the child's capacity for autonomy and the teacher's provision of situational freedom for the child. Here, it must be made clear that Piaget also did not aim at total situational freedom but at the point that the teacher "respects the child as a person with a right to exercise his or her will is taken in consideration (DeVries & Zan, 2003, p. 64)." In other words, it is necessary for the child to be actively engaged in an autonomy supportive classroom during the teaching process.

Although the explicit pursuit of autonomy is a desired goal, there are studies which claim that implementing autonomy in formal educational systems can also be problematic. Within a formal educational system, besides the problems due to fixed curricula and exams, "loss of control, chaos and inefficient learning are threatening and presumed implications of learner autonomy (Trebby, 2008, p. 34)". Within the classroom, according to Trebby (2008), these are some major reasons why teachers may be reluctant to the introduction of learner autonomy. However, Trebby (2008) also notes that "there is evidence from many countries that learner autonomy appears to be functional even within the constraints of institutional context" (p. 34). An important point is the awareness raising of the possibility of being able to promote learner

autonomy, despite the constraints of institutional contexts, through autonomy supportive teachers within formal educational systems.

### **3. Involving students in lesson planning**

Instead of pushing students to think in a certain way, teacher linking the learning to the student's own goals and personal interests and providing them with choices and chances to be able to freely voice themselves in their own learning is a less intruding manner and, simultaneously, beneficial in motivating them. At this point, it must not be misunderstood that autonomy supportive does not mean less teacher controlling and laissez-faire permissiveness. Teachers must be aware that some attempts to increase the structure can rise to confusion between structure and control, and this, in turn, will result in a controlling or authoritarian classroom climate.

It is important that teachers as leaders of the classroom are aware of the benefits and wealth that can be gained by students through their preferences of teaching. Involving the students in decisions and providing them with choices pave the way for independent learning, which is an important characteristic of learner autonomy. However, though teachers may be leaders in this leadership, as stressed by Tütüniş (2011) "teachers need to convince themselves that students learn when they want to learn and what they want to learn, not what the teacher teaches them. So, teachers need to encourage students to grasp things themselves, in other words they need to create learner-centred classes where students take decisions (p. 165)." In a similar vein, providing students with decisions in the classroom was an issue addressed by Dam (2011, p. 43) who claims "having to choose requires reflection (cf. Little, 2006), which again heightens awareness of learning, both are valuable and important side-effects of choice. Making a choice makes the learners feel responsible and being allowed to make choices and to have a say in one's own learning process supports self-esteem".

In the area of enhancing learning autonomy within the classroom, Balcıkanlı (2010, p. 95) states that "there is a great deal of research suggesting that involving students in the decisions such as individual/pair group work, use of materials, type of class activities and type of homework activities provides them with choice of different approaches and understandings to foster learner autonomy (Benson, 2001; Fenner & Newbey, 2000; Nunan, 1999; Ryan, 1977)". Similarly, in a study relating to the classroom, Dam (2011) based on her own experience, emphasizes the role of the teacher as being all-important for the development of autonomy and suggests that it is the teacher who "is responsible for presenting her learners with the demands outlined in the curricular guidelines for their learning within which they can set their individual goals. It is equally important that any restrictions for their freedom to choose and act are made clear (cf. clear guidelines for the learners for what to do). It is also her responsibility to establish some kind of transparent structure for a lesson or a teaching/learning sequence which the learners can take over, partly or completely, in due course (p. 45)."

According to Dam (2011), teachers "have to consider activities where all the learners have the opportunity of actively taking part. A rule of thumb in this connection is to make sure that an activity gives scope for any learner to add to the activity as well as to gain from the activity" (p. 44). It is important for teachers to provide tasks which appeal to and have meaning for the learner. In this way, the learner can develop a sense of ownership over the learning process and aim to reach a sense of satisfaction or mastery over the conduction of the task.

The benefits of involving learners in making decisions and the provision of choices were shortly addressed. At this point, it must be noted that shifting the responsibility to

the learner is not very easy because after motivating the students, namely, distilling the willingness to learn in them, the teacher has to consider how s/he can build on the learner existing knowledge and decide on the activities which will address all of the students and at the same time foster learner autonomy.

#### **4. Involving students in assessment**

In autonomy supportive classroom, after motivating the students to learn, as a part of the learning process, the students also need to be encouraged to monitor and evaluate the progress they are making in their process of learning. However, in an institution where there are fixed exams, there is no doubt that the students will have to take traditional forms of assessment, such as pen and paper tests. Therefore, in addition to these traditional tests, the teacher in an autonomy supportive classroom also employs alternative assessment methods. For example, self-assessment is an example for alternative assessment. This type of assessment is also particularly related to autonomy.

Self-assessment can be defined as a self-directed activity entailing not only the monitoring of one's progress but also the evaluation of one's own knowledge, skills or performance. In addition, self-assessment helps learners measure their level of success in the learning tasks. Supporting this view Liebovich (2000) states that "the purpose of having children engage in self-assessment is to help them determine what they think is their most gratifying and well-done work and what goals they set for themselves and for evaluation purposes" (p. 237). Another important characteristic of self-assessment described by Liebovich (2000) is that "a child engaging in self-assessment gives a teacher and parents the opportunity to clarify for themselves what the child articulates as his or her strengths in learning, to determine whether the learning goals that teachers and parents set for a child are shared by the child, and to determine what skills the child thinks he or she needs to improve" (p. 237).

Amongst the most popular types of alternative assessment, which are notable for fostering autonomy in children are "language portfolios". Portfolios are purposeful collections of student work gathered over time demonstrating to the students and teachers the student's language efforts, growth and development. Genessee and Upshur (1996) claim that "if portfolios are reviewed routinely by teachers and students in conference together, then they can also provide information about students views of their own language learning and the strategies they apply in reading and writing, for example. This in turn can enhance student involvement in and ownership of their own learning" (p. 99). In addition, portfolios promote student involvement in assessment and responsibility for self-assessment. Through implementing portfolio assessment, the teacher has the student "involved in documenting, monitoring their own progress and identifying learning goals (*ibid*)". As can be seen from these characteristics of portfolio assessment, the portfolio is not only an effective language assessment tool but also an influential instrument in the development of young learner autonomy.

#### **5. Conclusion**

Even for adults the development of learner autonomy is a problematic issue since it "is not a question of a help yourself - menu for what to do, neither for teachers nor for learners (Dam, 2011, p. 41)". Therefore, learners at early ages need to be acquainted and guided smoothly into the autonomization process. Notably, in contexts where learning begins at primary school it is a crucial aspect for the teacher to be aware of the point that they are one of the main sources of initiating the development of the autonomy of their learners. Teachers, especially, those of young learners need to ensure a learning environment which nurtures and fosters learner autonomy.

The present study discussed various studies and attempted to display how the autonomy supportive teacher can, in differing dimensions, be influential in fostering the autonomy of young learners within the classroom environment. Based on the above, it is possible to infer that despite an educational system where there may be external constraints, i.e. the curriculum of a course where the course objectives, teaching methods and evaluation procedures are described in detail and provided that the teacher's internal constraints, i.e. teacher beliefs, professional development, and attitudes are not an hindrance for innovation and development, the teacher can move from a teacher-centered environment to a more learner-centered environment which fosters learner autonomy.

In the classroom, the teacher's own planning of the lesson in terms of creating the atmosphere, motivating the students to take over the responsibility for making choices in the planning of what they want to learn, and having them reflect on their learning for evaluating the outcome, assist the development of learner autonomy. To conclude, studies have displayed the influence of the elementary school teacher because it is up to the teacher to create a classroom environment which begins to gradually pass over the responsibility of learning to the young learner and, thus, begin to enhance learner autonomy. The earlier the teacher offers the key to children for lifelong learning, the better.

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## **6.5. Biopedagogism: A new model of training for special education teachers**

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### **Abstract**

*The special educator finds herself at the center of the educational changes, thus, the implementation of new pedagogic theories, such as biopedagogism, is of particular importance. Biopedagogism is an interdisciplinary approach between the Pedagogic-educational strategy and biology while it also takes into account the evolutionary process of the human brain. This paper will attempt to record the relationship of biopedagogism with special educators' training. An empirical research was conducted in the Epirus region (Greece) during the school year 2014-2015. The results of the pilot study showed a positive correlation of the two factors while opening more space for additional investigation.*

**Key-words:** Biopedagogism, teachers, special education, biology, training

### **1. Introduction**

The question of how to train teachers working in School Units of Special Education (SMEAE) is timeless and particularly crucial. In the contemporary societies of information and learning, the education system must successfully respond to the constant changes that occur in the community of SMEAE and the individual needs of each student. Any passive way of learning belongs to the past, while an active process of thinking and acting prevails instead. Meanwhile, the ever-changing learning environments require the student have the sufficient flexibility to adapt to them. The special educator is required to orientate herself/himself towards this practice. Moreover, the new challenges of the globalisation of knowledge and learning require the special educator train appropriately and strengthen her education capital gaining new experiences, knowledge and teaching skills (Cochran- Smyth & Lytle, 2001). The term training is defined as “all the activities and procedures related to the conception, design and implementation of specific programs, which are primarily intended for; enrichment, upgrading and development of academic – theoretical or practical, professional and personal interests, abilities, knowledge and skills of teachers during their tenure”

(Darling-Hammond & Lieberman, 2012, p. 151). In other words, each special educator must become a “lifelong learner” (Karagiorgi, Kalogirou, Theodosiou, Theophanous, & Kendeou, 2008). In this way, his/her knowledge is constantly updated and his/her techniques are parallel to the scientific developments of special education (Goddard, 1989).

Biopedagogism is the new pedagogic theory which can effectively support this transformation of special educators’ role. This is a new proposal in the field of education, as it is an interdisciplinary approach that moves between teaching-pedagogical strategies of education and biology. Biopedagogism theory takes into account the evolutionary process of the human brain with a view of exploiting the cognitive construction phases and understanding the temperament of the individual. It is a learning process which happens at school and is based on the holistic conception of knowledge, which takes place alongside the holistic functioning of the brain (Alahiotis & Karatzia-Stavlioti, 2009).

According to biopedagogism, the learning process is based on both the biological pillars of phylogeny and ontogeny of the human brain as well as on the pillar of the educational process. More specifically, some mind competences are observed in the biological pillar of ontogeny where the brain is growing. Those competencies can develop into skills through the appropriate educational intervention. The same process is recorded in the evolution of the human species Homo Sapiens (Alahiotis, 2007). The fundamental competences are displayed hierarchically as follows: Technological competence (T-Technological), which evolutionarily appeared first, Social competence (S-Socialization), Linguistic competence (L-Language) and Numeracy competence (N-Numerical). The chronological order of the competences follows the figure T>S>L>N. (Gärdenfors, 2006; Stringer & Andrews, 2005). The link of the four competences is their interactive relationship which works as follows: the technological competence will enhance the social, the social will consequently enhance the linguistic one, which will enhance the numeracy competence. This link follows the order T>S>L>N if the person is very young. After the age of ten (10) years the order of the four skills changes as follows T <S <L <N (Alahiotis & Karatzia-Stavlioti, 2008; Posner & Rothbart, 2007). The interaction of the fundamental competences in this new connection is defined as “inversion step” (IS). The use of the hierarchical evolutionary course of the four competences combined with the appropriate teaching course by the educator is expected to give great learning outcomes (Alahiotis & Karatzia-Stavlioti, 2009).

Considering the above, one question arises: how can the special educator use biopedagogism to effectively respond to professional challenges and assist students with disabilities? To answer this question a pilot study was designed and implemented. The aim of the research was to check whether the effectiveness of biopedagogism theory could apply in special education with the aim of becoming a new training model for special education teachers. The focus was placed on the relations of biopedagogism and special educators’ training.

## **2. Methodology**

In accordance with the aforementioned context, a quasi-experiment assessment research was conducted on a pilot level. The quasi-experiment study is one of the most popular alternative designs and experiments concerning handling variables and measurements without using random definitions of the subjects in the experimental conditions where they are compared (Cook & Campbell, 1979).

This research consists of two phases. The first phase refers to the training of two special educators (experimental group) in biopedagogism. The second phase included

the implementation of the principles of biopedagogism by two trained teachers on eight students with middle mental retardation and training of eight more students with the same degree of mental retardation by two special educators who follow traditional teaching methods (control group).

In particular, the first phase consisted of six three-hour meetings with the teachers so they can reach the anticipated degree of familiarity with the theory of biopedagogism and be, therefore, able to select the appropriate competences to teach the students with middle mental retardation. At this point, we have to note the participants' active presence and involvement. To conduct this research, we recorded the special educators' teaching methods and techniques. The data processing included information gathering, interpretation and quality evaluation according to the research objectives. In other words, it was an attempt to assess special educators' professional performance in the classroom after they had received training in the four skills of the biopedagogism (T, S, L, N).

The second phase concerned the teaching of biopedagogism principles by two special educators who had received the above mentioned training and two who had not. Both groups were teaching groups of eight students with middle mental retardation (experimental and control group respectively). The purpose of this phase was to identify possible differences in the school performance of the students with mild mental retardation based on the time that special educators used to cultivate the four competences of biopedagogism. More specifically, they applied teaching methods that strictly followed the hierarchical interaction of the four competences according to the relation T>S>L>N.

The activities selected for the students to carry out in order to implement the new learning model were intentionally made to correlate to the Technological competence, the Social, the Linguistic and the Numeracy one. The students had to: 1) build a box with pieces of puzzle, 2) work in groups of two, 3) discuss the tasks they completed with the team if they felt satisfied with the outcome or if they could work alternatively and 4) measure how many puzzle pieces each student used for the construction of the box. In the control group, the activities followed a random order, while the experimental group followed the above mentioned rank. All participants (experimental group and control group) were informed of the exact process of the research.

Based on the theory of biopedagogism and the evolutionary hierarchy of students' competences (where the Technological (T) has come evolutionarily first, followed by the Social (S), the Linguistic (L) and the Numeracy (N), we expected that, if the special educators receive the appropriate training as part of a lifelong learning, they will become more effective when teaching. Furthermore, we expected that students with middle mental retardation who were taught using the evolutionary order of the four competences would show higher academic achievements compared to the students who were taught randomly.

This research was conducted during from October 2014 to May 2015 in the region of Epirus.

## **2.1. Sample**

The education model of biopedagogism was applied in the experimental group, which consisted of two special educators. Meanwhile, two special educators who did not receive training in the principles of biopedagogism constituted the control group. The relationship of the four skills applied to teachers' training was of the form T < S < L < N, hence the IS.

In regards to the second phase, the students with middle mental retardation were 16. The experimental group consisted of eight students and the control group constituted the remaining eight. The degree of mental retardation was diagnosed by the Pedopsychiatrist Centres throughout the country's hospitals. The students were of the same age, IQ and socio-economic background.

### **3. Results**

According to the results of the study, the experimental group showed a higher level of learning efficiency in connection with the provided skills. The students from both the experimental and the control group were asked to perform certain activities which were consistent with the hierarchical order of the new theory of biopedagogism. The activities selected for the students to carry out in order to implement the new learning model were intentionally made to correlate to the order of the Technological competence, the Social, the Linguistic and the Numeracy one. The students had to: 1) build a box with pieces of puzzle, 2) work in groups of two, 3) discuss the tasks they completed with the team if they felt satisfied with the outcome or if they could work alternatively and 4) measure how many puzzle pieces each student used for the construction of the box.

Initially, the level of knowledge and experience of the students with middle mental retardation in both the experimental and control group was tested to see their relationship with the proposed activities. Indeed, they did not have all the knowledge and experience required to carry out the activities (Table 1).

**Table 1**  
*Measuring Student Experience before the Activities*

1st measurement	
Activities	Pre-test
Puzzle box construction	No
Cooperation	No
Discussion	No
Numbering puzzle pieces	No

Then, the experimental group implemented the activities in the following order: puzzle box construction, cooperation, discussion, numbering puzzle pieces, while the control group carried them out randomly. Regarding the evaluation, the experimental group scored more positive results compared to the control group. During the implementation of the activities, the overall behavior of students with mild mental retardation was observed. In particular, we found that the learning process of the experimental group was more efficient. This finding is based on the fact that in the experimental group, the activities were performed according to the hierarchical evolutionary origin of the four competences: T> S> L> N (Table 2).

**Table 2**  
*Evaluation Results after the Completion of the Activities*

Activities	2 <sup>nd</sup> measurement (control group)	2 <sup>nd</sup> measurement (experimental group)
	Pre-test	Ps-test
Puzzle box construction	No	Yes
Cooperation	No	Yes
Discussion	No	Yes
Numbering puzzle pieces	No	Yes

At this point, we need to note that the experimental group was taught by special educators trained in the theory of biopedagogism. Moreover, the qualitative analysis of the observations showed that the trained teachers showed a greater flexibility regarding their students' needs, a faster response to their students' needs and a higher level of empathy towards their students' difficulties. It seemed that special educators who were trained in biopedagogism and used the hierarchical order of the four competences with the numeracy competence (N-Numerical) followed by the linguistic (L-Language), the social (S-Socialization), and technological skill (T-Technological) in their teaching could lead their students to better learning outcomes when compared to the special educators who used random or traditional ways of teaching. Moreover, the special educators who were trained in biopedagogism were able to better comprehend the complexity of the human mind and conceptualize students with mental retardation as organisms. They had the ability to use teaching methods based on the biological processes of the brain but most of all they could apply them while teaching their lessons. On the contrary, the special educators who were not trained in the theory of biopedagogism could not perceive the students' shortcomings and weaknesses accurately. Therefore, they lacked the ability to adjust their teaching properly. In addition, they faced difficulties in adapting the teaching materials to their students' educational up and downs. They also expressed a sense of insecurity and educational failure and the need to receive updated training when teaching students with mental retardation.

Overall, the study found that training in the new model of biopedagogism gave the special educators the ability to handle mental retardation more effectively and feel a greater satisfaction with their job.

#### **4. Discussion**

The analysis of the research results highlighted a positive correlation between teaching based on the theory of biopedagogism and the effectiveness of the educational process. The special educator who was trained in the principles of biopedagogism showed better learning outcomes compared to those who did not receive any training. This finding may be explained by the fact that biopedagogism proposes to approach the student as a biological entity, while it also takes into account the student current

situation during the educational process. Therefore, the special educator who has received training can better understand the capabilities of the organism to be taught.

Undoubtedly, the training of special educators directly reflects their choice of teaching practices and the effectiveness of the learning process, especially when the teacher is asked to manage the diverse opportunities and needs of the students attending SMEAE. In order to manage the multilevel role of the special educator she is invited to train herself regularly and transform the empirical pedagogical-educational approach of teaching to a scientific process of knowledge acquiring (Alahiotis, 2007).

The theory of biopedagogism is built within this context. Once implemented after the relevant training of special educators, it underlines that students with mild mental retardation can successfully face learning problems. The special educators provide the appropriate teaching methods based on the principles of biopedagogism leading to a holistic learning process which is based on four inherent human competences that eventually become skills. The differences observed in the teachers' effectiveness of teaching students with mild mental retardation can be interpreted on the basis of them having received biopedagogism training or not. Moreover, it was found that the range of skills that students with mental retardation are required to conquer depending on their age is crucial for the achievement of learning. More specifically, the activities to be taught should follow the following hierarchical order: T < S < L < N. Providing activities randomly could have exactly the opposite effect. This was a successful way of testing the usefulness of the biopedagogism model.

In conclusion, training of special educators in the biopedagogism theory has positive effects on the students with mental retardation and their learning. Teaching becomes more substantial, as it takes into account the student needs. Therefore, all the existing training programs of special educators must adapt to the new scientific data and test every new and innovative teaching proposal. However, the scientific advancements recorded in the field of Pedagogy, Psychology, Medicine, Biology, Sociology, as well as any proposal training should be consistent with teachers community.

At this point, we need to note down that the present research is a pilot effort to study the implementation of the new model of biopedagogism. Therefore, the results cannot be generalized given the small sample. In addition, there is no existing study in the realistic attempt of the special educators to follow the teaching techniques imposed by the theory of biopedagogism in their every day teaching.

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## **6.6. In-service teacher continuing training in Greece: an overview of institutional training**

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### **Abstract**

*Continuing training activities seek to update the knowledge teachers acquired during the initial teacher education and provide them with new skills and professional understanding. Legislation concerning teacher training in Greece can be traced back to 1910 with the establishment of the "Didaskaleion", while in 1922, Law 2857 introduced training programmes for Primary Education teachers at the University of Athens. The education reform of 1976 created professional teacher training schools for elementary and secondary teachers, called "SELDE-SELME", which offered in-service training for one year. An attempt to improve the above teacher training system led to the setting up of a network of regional centres for professional training (PEKs) in 199 . A major innovation was the implementation, Law 2986, of the Teacher Training Agency (OEPEK). This paper aims to analyse the above training institutes in order to examine the progress in the organisation of Greek in-service training. The results seem to be encouraging as far as the quality of the offered training is concerned.*

**Key-words:** Greece, in-service, continuing training, institutes, progress, quality

### **1. Introduction**

Professional development is social and ongoing occurring through experience and practice and allowing people to learn from and with others in particular ways (Lieberman & Mace, 2008; Villegas-Remers, 2003). The most effective teacher professional development occurs through interaction and debate, not only among teachers but within stakeholders (administrators, parents) (Villegas- Remers, 2003). This paper comes up with teacher professional development that occurs within official institutes authorized by Greek Government and aims through literature review to present and analyse the major training institutes in Greece in order to examine the problems teachers faced all those years throughout their training within the framework of those institutes and the progress (made or not) in the organisation of Greek in-service training (by those institutes). The searching of the relevant literature has taken place in the last year in online journals and relevant online books with the help of internet -Web through a searching machine called " Google Scholar", which drives to academic literature.

### **2. What is teachers' continuing training?**

Continuing training activities seek to "update, develop and broaden the knowledge teachers acquired during the initial teacher education and provide them with new skills and professional understanding" (OECD, 2005, p.122). Continuing training allows teachers to understand the link between particular teaching activities and techniques,

the way different groups of students respond and what their students actually learn (Timperley, 2008).

As analysed by Buchberger, Campos, Kallos, and Stephenson (2000), "in rapidly changing societies with increasing demands on the teaching profession, even preserving the existing quality of the school systems calls for increased training as well as new competencies" (p. 54).

### **3. Why is teachers' continuing training important?**

It is necessary for teachers to update their skills, especially in the context in which the school situation has changed (introduction of new curriculum, new research on teaching, adaptation to the changes in student needs due to socio-economic evolutions). Moreover, teaching is a complex and demanding intellectual work, which cannot be accomplished without the adequate preparation. Research shows that the most effective way to raise educational quality is to modify initial teacher education and recruitment and develop the means to train teachers that are already in-service (Eurydice, 2004).

In addition, McBer (2000) based on a series of interviews with teachers identified 16 "professional characteristics" including personality traits and individual attitudes, which she then classified into five groups: a) Professionalism: commitment, confidence, trustworthiness, and respect b) Thinking: analytic and conceptual thinking c) Expectations: disposal of achievement of high objectives, disposal of permanent comprehension of reality, and undertaking of initiatives d) Leadership: flexibility, accountability, passion for learning e) Relations with others: fertile interaction with those involved in the educational process, skills of common work, while mentioning that comprehension and teacher training is important because of its impact upon those professional characteristics and teacher quality.

Moreover, research show that in-service continuing training raise the: 1) Teachers' Mental and Physical Health Growth. The desire to improve oneself in the job is a priority for anybody who is thinking seriously about his work and getting involved in in-service courses for personal development and relieves good teachers of emotional strain and excessive fatigue. 2) Broadening his social contacts. In-service training for professional growth offers the opportunities to make friends and widen social contacts. 3) The desire to know more about the profession. Good teachers, therefore, feel inadequate if they do not reach out for more knowledge. 4) Advancement on the job. Everybody wants to get on in his job. This is the a professional person's basic ambition. Nobody wants to remain stagnant throughout his teaching career. They want to become head-teachers, curriculum specialists, guidance counselors, psychologists, supervisors, principals, heads of department, directors, etc. All these positions are available for those who work their way up through in-service courses and self-study (Ajoku, 2013).

### **4. In-service teachers' continuing training in Greece**

According to Article 29 (Official Gazette, A30-9-1985), in Greece, the responsibility for teachers' continuing training at primary and secondary level rests with the following bodies: -Higher Education Institutions (AEI), -Higher Technological Institutions (TEI), -the Pedagogical Institute, -Regional Educational Centres (PEKS), - the School of Pedagogical and Technological Education (ASPETE), - the Research Centre for Issues of Equality, - the Greek Language Centre (Papagueli & Vouliouris, 1999; Palaiologou & Tsapakidou, 2009).

Legislation concerning teachers training in Greece can be traced back to 1910 with the establishment of the "Didaskaleion", a training institute for Secondary Education teachers (Official Gazette A152/22-4-1910), while in 1922, Law 2857 (Official

Gazette, A133/1-8-1922) introduced training programmes for Primary Education teachers at the University of Athens. The most important step, however, towards the implementation of a coherent teacher training framework in formal education was enforced under Law 1566/1985 (Official Gazette, A167/30-9-1985) providing a general framework for the restructuring and operation of education in Greece.

Before that, the education reform of 1976/77 created professional teacher training schools for elementary and secondary teachers called “SELDE-SELME”, which offered in-service training for one year. Their aim was to keep teachers in touch with the new developments of the educational science and school practice promoting, at the same time, the administrative and supervisory mechanisms of education. However, these training schools did not succeed in satisfying educational needs. Most of the teachers remained unfamiliar with the new scientific and pedagogical developments and were absent from any decision making and educational planning. Some of the most outstanding weaknesses of the system are related to the number of trainees involved, while very few teachers were actually involved in these training schools related to the total number of applicants (Official Gazette, A167/30-9-1985).

An attempt to improve the above teacher training system led to the setting up of a network of regional centres for professional training. The Regional Training Centres (known as PEKs) are self-governed institutes having administrative and economic autonomy, which are responsible for all training activities with three departments each under the same roof and administration: for nursery, primary and secondary school teachers. They are allowed to independently develop their study programme which is adjusted to individual teacher need appraisal. The programme of studies is a combination of theory (psycho-educational topics and methodology) and practice (attending school classes, evaluation of teaching) (Official Gazette, A167/30-9-1985).

Their establishment was proposed in 1981, enacted in 1985 and implemented in 1992. Operating on a regional basis, they provide a variety of training to permanent and newly appointed teachers and organise a range of short term courses aiming at a continuous renewal and updating of professional training. Thus, newly appointed teachers have the opportunity to attend a compulsory short training course held at the beginning of the school year, which aims to inform them about teaching methodology and school life. It is worth noting that the role of introductory training in Greece is particularly significant because new teachers are for a long time away from school reality until they get appointed to vacant working positions. Attendance is compulsory for those who are going to be appointed to schools soon as well as for those who have been teachers from five to twenty-five years of service. The training aims to provide capabilities of the use of teaching methods, assessment and class management (Official Gazette, A167/30-9-1985).

A major innovation was the implementation, under Law 2986/2002 (Official Gazette, A24/13-2-2002), of the Teacher Training Agency (OEPEK), a private entity in Athens and supervised by the Greek Minister of Education, which is responsible for setting training policy, coordinating and implementing training activities. Moreover, the critical role of the European Community should be highlighted, as, since 1997, several training programmes, financed by the Community Support Framework, have been launched for the academic and professional upgrading of staff in the Greek educational system, which are addressed to newly appointed teachers of primary and secondary education, older teachers and administrative staff (Papastamatis & Panitsidou, 2008).

## 5. Conclusion

Comparing the above training systems we come up with the conclusion that the major problem teachers faced all those years throughout their training within the framework of those institutes was the lottery system and the factor of luck in their participation. This problem was solved by the PEKs, which made it compulsory for all teachers. Moreover, the results seem to be encouraging as far as the quality of the offered training is concerned, as the above training systems, nowadays, combine theory with practice, which is very important because teacher training has a significant impact on teachers' behaviours, teaching skills and most of all on the students' outcomes.

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## **6.7. In-service education on ICT: Characteristics, goals and ambitions of participating teachers**

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### **Abstract**

*The goal of the present study is to investigate teachers' characteristics who choose to receive in-service education on ICT and examine the reasons that lead to this choice and their plans and initiatives concerning introduction of ICT in their courses. A quantitative approach was followed, while more than 100 questionnaires were analyzed. Preliminary results reveal the profile of participating teachers (40-50 years old, with more than 15 years of experience), the importance that teachers attribute to ICT in the education process and their desire to acquire more practical knowledge and establish the use of ICT in their everyday teaching.*

**Key-words:** In-service education, ICT, primary school teachers

### **1. Introduction**

Teachers' in service education is indisputably one of the major factors that improve the quality and the efficiency of modern educational systems. Through the acquisition of new knowledge and the update of their pedagogical and teaching practices, teachers become more open and receptive to eventual innovations or changes introduced in the educational system (Fullan, 2007). In addition, according to the European Union's Council (2007), the teaching profession should among others follow the principle of lifelong learning, while teachers should have high level qualifications.

Moreover, with the introduction of Information and Communication Technologies (ICT) in the educational field as a tool for a more effective teaching and learning or as a source of knowledge and communication, the need for in-service education seminars on the topic have become mandatory (Bullock, 2004 ; Cox & Webb, 2004). In Greece, especially, where most teachers' ICT skills can be characterized as basic, if not nonexistent<sup>i</sup>, this need has become urgent. Thus, the Ministry of Education has launched two cycles of ICT in-service education seminars during the last decade (2001-2009) aiming ,on the one hand, to respond to teachers' constant needs and, on the other hand, to promote the introduction of ICTs in the everyday teaching. These seminars have been accepted with great interest from the teaching community and were followed by a large number of teachers, according to data from the Ministry of Education, which proves their necessity. Extensive research (Glavas, Baba, Papasakelariou, Ventouris, & Skaltsas, 2010; Maletskos, Penekelis, Zikos, Blioumi, & Rarra, 2009; Papanikolaou & Jimmogiannis, 2005) was conducted aiming to evaluate those seminars and outline the

participants' attitudes towards the use of ICT in teaching processes after acquiring the related skills. Most of the research recognizes the importance, the effectiveness and the success of the first and second level national training seminars, while expressing the belief that there will be long-term effects concerning the introduction and use of ICT into teaching.

### ***1.1. State of the problem***

The conclusion of the national level seminars on ICT was followed by a period where in-service education passed into the background, mostly due to the Greek economic crisis and the suspension of several in-service education institutions. However, the Institute of Pedagogical Researches and Studies (IPEM) launched a four year (2012-2015) co-funded project<sup>ii</sup>, where, among other actions, three cycles of in-service education addressed to kindergarteners and teachers of primary schools, were implemented from June 2014 to June 2015. After taking under consideration teachers' demands and needs, 13 thematic areas were chosen and 90 groups were formed in Epirus, Thessaly and West Macedonia. The fourth mostly asked topic of in-service education Institute's seminars was the one on ICT, only five years upon the completion of the national level ICT seminars.

Thus, we were interested in examining who and for what purpose one chooses to get in-service education on ICT, at the moment that the national level seminars on the topic were successfully implemented just a few years ago. So, the goal of this study can be considered to be dual. On the one hand, we tried to investigate the characteristics of teachers' who chose to participate in the seminars. On the other hand, we examined the reasons that led to this choice, as well as the teachers' current attitudes and their ambitions concerning the introduction of ICT in their teaching. More specifically, we attempted to answer the following research questions:

- What are the teachers' demographic characteristics and their educational background participating in IPEM's ICT in-service education seminars?
- What are the reasons that drive participating teachers to choose this thematic area?
- How do teachers use ICT in their teaching and what are the changes or novelties they would like to make when improving their skills?

## **2. Method**

Respecting the nature of the problems and aiming to assure the reliability and the validity of our results, we opted for a quantitative approach. Thus, we created a questionnaire of 22 closed questions, the first seven concerning demographic information and the rest specifying the research. More than 125 questionnaires were distributed to all participants in ICT seminars in Epirus, Thessaly and West Macedonia and around 100 were collected and analysed. We used SPSS Statistics software for the elaboration of questionnaires.

## **3. Results**

### ***3.1. Data analysis***

Data analysis was conducted using descriptive statistics and correlation matrix. For all three research questions, frequencies, means and standard deviations of the collected data were calculated, while correlation analysis was performed to identify relations between variables. Spearman's rank correlation was used to find the significant relations between the ordinal variables, while Cramer'sV was used to find the significant relations between nominal and ordinal variables.

### **3.2. Participants' demographic information**

The demographic information of participating teachers included gender, age, specialties, years of service and teachers' participation in other ICT training program (depicted in Table 1). Out of 100 participants, nearly one fifth (21%) were males and the rest of them were females. The majority of the respondents (30%) had 11-15 years of service. Moreover, about four out of five respondents (79%) reported that they have attended other ICT programs in education. Almost half of them had successfully completed the 1<sup>st</sup> level national training seminar and the other half had completed the 2<sup>nd</sup> level national training seminar.

**Table 1**  
*Participants' Demographic Characteristics (N=100)*

Characteristics	n	%
Gender		
Male	21	21
Female	79	79
Age		
<30	6	6
30-40	23	23
40-50	66	66
>50	5	5
Specialties		
Primary teachers	65	65
Kindergarten teachers	25	25
Other specialties	10	10
Years of service		
0-10	22	22
11-15	30	30
16-20	21	21
>20	27	27
Have you attended other ICT program		
Yes	79	79
No	21	21
Participation in other ICT training program		
First level seminar	42	42
Second level seminar	46	46
Other training program	12	12

### **3.3. Designing participating teacher's profile**

Five core characteristics relating to the teachers' profile have been identified:

- Mostly women
- 40-50 years old
- Worked in primary education
- 11-15 years of teaching experience
- Successfully completed 1<sup>st</sup> or 2<sup>nd</sup> level national training seminar

### **3. 4. Research question 1: Why getting in- service education on ICT?**

Respondents were asked to answer four questions explaining the reason for getting in- service education on ICT. As shown in diagram 1, with regard to the first question, "The choice of this theme", the majority of the respondents (60%) answered that the

specific theme was their first choice, a smaller percent (32%) answered that it was their second choice, while the rest of the answers fall in the categories of third choice or not interested at all in the topic.

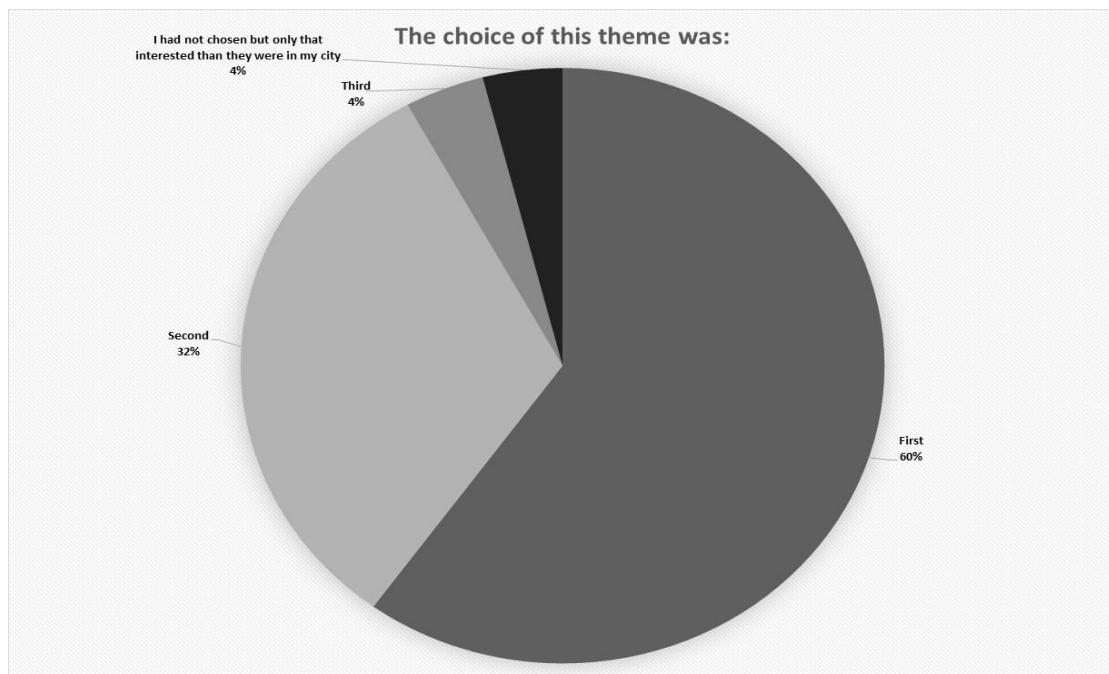


Figure 1: Priority of ICT theme selection

With regard to the second question, “how important is the contribution of new technologies to education (on a 10-point scale)”, the mean average was 8.46 ( $SD=1.218$ ). In the third question, respondents were asked to indicate on a five-point scale ranging from highly dissatisfied (1) to highly satisfied (5) their evaluation on the level of knowledge of new technologies. As shown in figure 2, the majority of the participants (41%) evaluated themselves as having an acceptable level, nearly one third (30%) stated that they are in a satisfying level, while only one tenth (9%) of the participants believed that their level is highly dissatisfying.

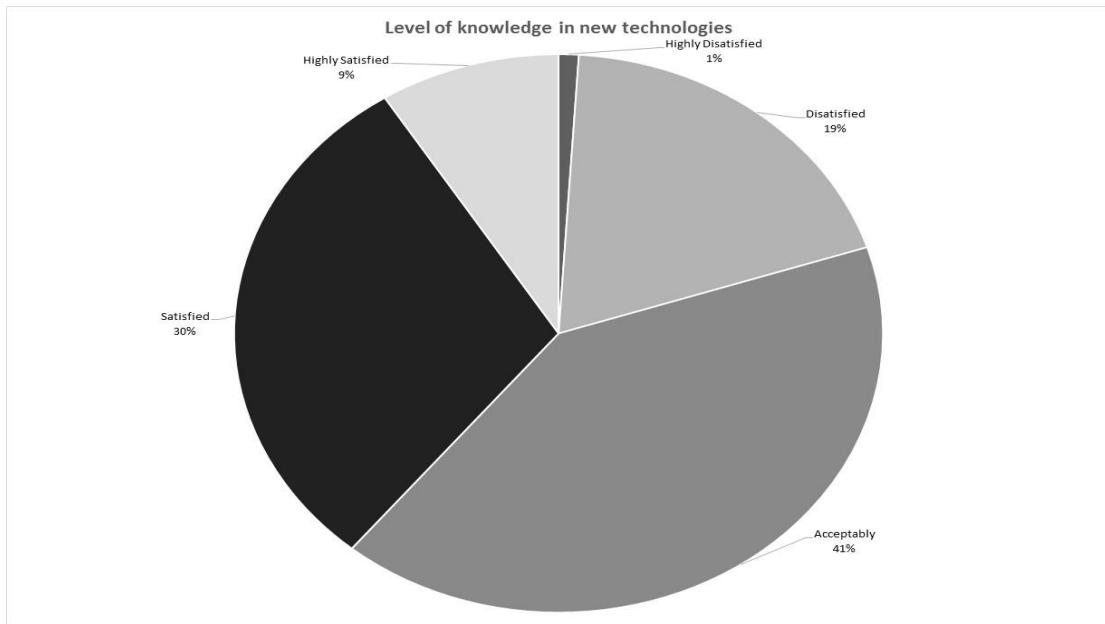


Figure 2: Level of knowledge of new technologies

In the fourth question, “Why choosing this theme?”, the majority (37%) of the sample stated that they wanted to gain more practical knowledge, a smaller percent (30%) answered that they wanted to familiarize themselves with new technologies, while the rest of the sample disperse in the answers “I wanted to perfect my knowledge”, “I wanted to get more theoretical knowledge” and “I believe that ICT is a useful theme”.

### **3.5 . Significant correlation in research question 1**

There was a significant effect for age,  $t(99)=-4.46$ ,  $p<.001$ , with younger participants more likely to recognize ICT contribution to education. Results indicated a significant preference to ICT in education by teachers having an acceptable level of knowledge of new technologies ( $M=8.63$ ,  $SD=1.10$ ),  $t(99) = 2.80$ ,  $p=.006$ . Age and level of knowledge of new technologies were moderately negatively correlated,  $\rho(99)=-0.274$ ,  $p=.006$ , indicating that younger teachers had an acceptable or satisfactory level of knowledge of new technologies.

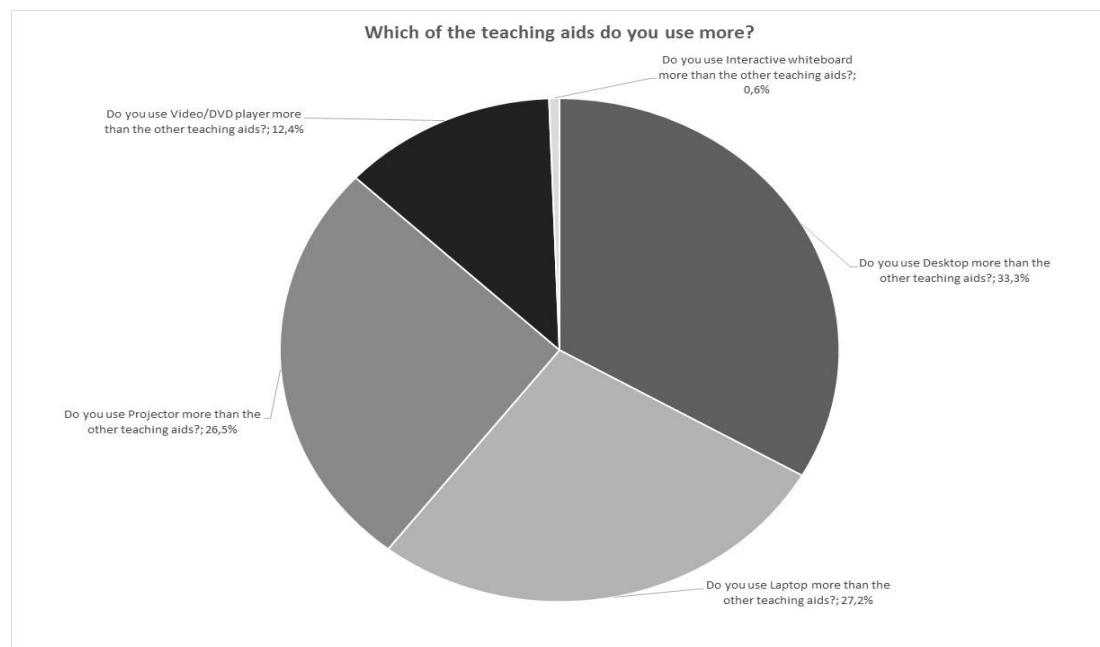
### **3.6. Research question 2: What is the current use of ICT in their teaching?**

Respondents were asked to respond to five questions on the use of ICT in their teaching. The answers to the first two questions, as shown in table 2, reveal that teachers use teaching aids frequently in their teaching. The majority of them (32%) respond that they use them once in a fortnight, 28% once a week and 20% almost in every lesson. At the same time, the majority of the teachers (57%) state that they use internet in almost every lesson preparation while a smaller number of participants (28%) use internet once or twice a week, as it results from the answers to the question "How often do you use internet for lesson preparation".

**Table 2**  
*Frequency of Using Teaching Aids and Internet*

Variables	I don't use	Once or twice a year	Once a quarter	Once a month	Once in a fortnight	Once or twice a week	Almost in every lesson
Use of teaching aids in teaching	8	0	4	8	32	28	20
Use of internet for lesson preparation	1	1	0	3	10	28	57
n							

Respondents were also asked to define the teaching aids that they mostly use in their teaching. The results of this question, as shown in figure 3, show that teachers use desktop PCs more than other teaching aids like laptops, projectors or DVD/video players. However, the use of a specific teaching aid is related to the available infrastructure in each school.



*Figure 3: Which of the teaching aids do you use more*

An interesting question was the one asking: "If you were given the opportunity would you use more new technologies during your teaching?". The majority of the respondents (97%) answered to this question that they would use more ICT in their teaching. On the other hand, as shown in figure 4, the main limiting factors concerning teaching aid use are the lack of the appropriate infrastructure and the fear of network failures or old machines not working properly. These observations are clear evidence that the teachers have the appropriate ICT knowledge, but the school units are not well-equipped.

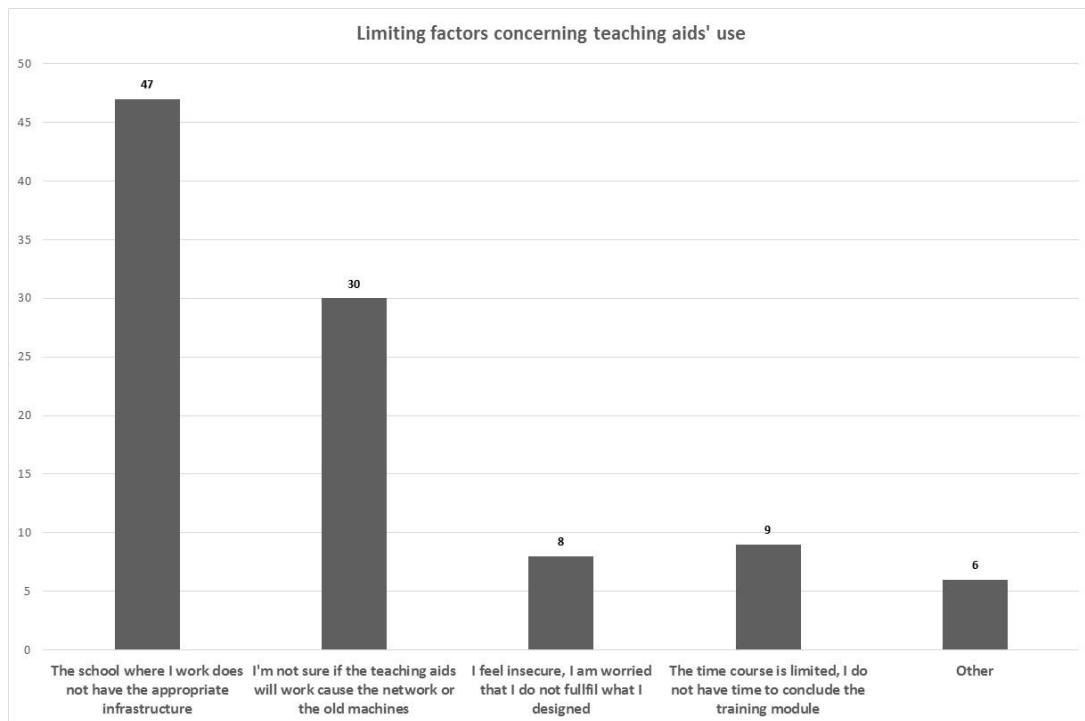


Figure 4: Limiting factors concerning teaching aids' use

### **3.7. Significant correlation in research question 2**

A chi-square test of independence was performed to examine the relation between those who used teaching aids in their teaching and those who used internet for lesson preparation. The relation between these variables was significant,  $\chi^2(25, N=100)=79.92, p<.001$ . Teachers who used teaching aids in every lesson also used internet for their lesson preparation. The relation between those who had attended ICT training programs in education and those who used Internet for lesson preparation is significant,  $\chi^2(5, N=100)=11.64, p=.04$ .

### **3.8. Research question 3: What are their ambitions concerning acquired knowledge?**

At the same time, respondents were asked to indicate how they intended to use the acquired knowledge. As shown in figure 5, most respondents (50%) answered that they would use the acquired ICT knowledge in class for the needs of teaching, while 32% stated that they would use it for the course preparation.

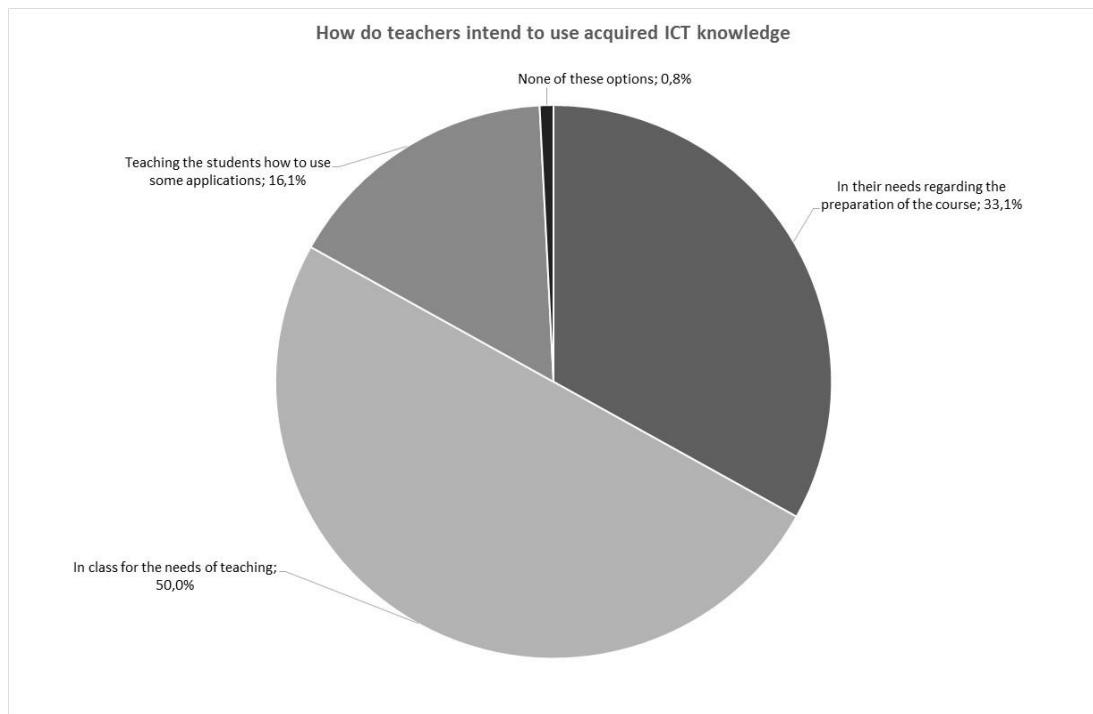


Figure 5: How do teachers intend to use acquired ICT knowledge

Teachers were also asked to designate their expectations on ICT use in their teaching. The results of the study revealed that they would like to get additional knowledge on the ways of recording and presenting material for teaching purposes. A smaller percent of respondents (18%) would like to get additional knowledge regarding the use of teaching aids, while only 6% answered that they needed to strengthen their theoretical knowledge. As a result, an ICT training program on education should focus on the use of teaching aids and how these can be used to strengthen the relationship between teachers and students.

#### 4. Discussion

As it occurs from the analysis above, the teachers choosing to follow ICT in-service education seminars were mostly women, 40-50 years old, working in primary schools and having 11 to 15 years of experience. Most of them had already followed the ICT seminars implemented by the Ministry of Education, yet the seminars on this topic were their first choice.

The reasons that led participating teachers to follow this topic of in-service education seminars can be summarised as follows. At first, they self-evaluate their skills in ICT as acceptable or just satisfactory and feel that they need to gain more practical knowledge and familiarize themselves with the use of New Technologies. Secondly, they appear to attribute a great importance to the use of ICT in teaching and their contribution to effective learning. At this point, it seems important to underline the fact that the younger the teachers are, the more they recognize ICT positive results in education.

Moreover, the use of ICT in teaching is not very regular (once a week or once every fifteen days), although a large percentage of the teachers (57%) appear to use internet based information and data for their courses preparation needs. The restricted use of ICT in their courses can be attributed to the school lack of modern equipment. Finally, as mentioned above, all participants wish to be given the opportunity to implement and

use the ICT more while teaching and intend to transmit, given the opportunity, the acquired knowledge to their students.

## 5. Conclusions

The conclusions reached from the findings of the present study can be summarised in the following points. First of all, it seems that teachers acknowledge the importance and the utilisation of ICT into their teaching and wish to introduce them to their teaching and class preparations. Secondly, in-service education on ICT should get a practical dimension and provide teachers with all the skills needed to manage modern educational tools and equipment. Thirdly, the need for schools to be better equipped appears, once more, imperative, while the equipment should be easily accessible to all teaching personnel.

Future work could focus on students' attitudes towards implementation of ICT in teaching, teachers' needs while using ICT and examining the teachers' reactions, attitudes and participation in learning communities through the use of ICT.

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<sup>i</sup>Interpretation based on the participation of teachers (83.315 teachers) on the first level ICT training seminars conducted on national level by the Ministry of Education during 2001-2005 (Ministry of Education, 2009)

<sup>ii</sup>The project was implemented under the scientific supervision of professor Anastasios Emvalotis and the project supervision of Nikos Maganaris, while president of the institute was Manos Androulakis.

## **6.8. Greek Elementary school teachers' attitudes towards educational research in relation to research experience and knowledge**

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### **Abstract**

*The present study focuses on factors associated with Greek elementary school teachers' attitudes towards educational research. Specifically, this quantitative study investigates whether teachers' attitudes are related to their training and experience with research and school type. Self-administered questionnaires were completed by 190 primary school teachers. Results showed that teachers take some interest in research and think it is rather useful, but they also think it is of limited applicability. Teachers, who have a research experience and have attended Methodology and Statistics courses, hold more positive attitudes towards educational research. Also, teachers who work in villages (small schools) take more interest in research.*

**Key-words:** Educational research, Greek elementary school teachers' attitudes, research experience and knowledge

### **1. Introduction**

Educational research, as a practical science, is an important part of the educational process, while its use by teachers can lead to school improvement (Bell, Cordingley, Isham, & Davis, 2010). Recent research findings indicate the need to embed educational research within school practice, as this is useful both for teachers' work and their professional development (Zeichner, 2003). To this end, schools should be engaged in research (Godfrey, 2014; Handscomb & Macbeath, 2003) and cultivate a research culture (Carpenter, 2007; Ebbutt, 2002). This cannot be realized unless school teachers hold positive attitudes towards educational research and have the ability to use research in their teaching practice in order to produce "local knowledge" (Stremmel, 2002). A number of studies show that school teachers are skeptical about the applicability of educational research, so the gap between research and practice still remains (Broekkamp & van – Hout Wolters, 2007; Vanderlinde & van Braak, 2010).

### **2. The gap between educational research and practice**

Many studies point to the gap between researchers and teachers' views (Biesta, 2007; Davis, 2007; Hemsley - Brown & Oplatka, 2005) and the value they pose on practical versus theoretical results (Shkedi, 1998). Broekkamp and Van - Hout Walters (2007 in Vanderlinde & Van Braak, 2010) highlighted four basic problems: "i) educational research does not provide valid and reliable results, ii) educational research gives few practical results, iii) practitioners believe that educational research is not practical and iv) practitioners do not have the skills to use educational research results" (p. 302). Teachers feel that educational research is not relevant to their needs and

published findings fail to help the understanding of school and class conditions (Sremmel, 2002, p.5). However, according to recent studies, the majority of school teachers recognize the value of educational research (Beycioglu, Ozer, & Ugurlu, 2010; Everton, Galton, & Pell, 2002; Sarafidou, 2011) and think positively about becoming researchers themselves at school level (Ekiz, 2006), as they are oriented more to practical results than the process. Moreover, the literature review by Leat, Lofthouse, and Reid (2015) provides evidence that teachers' experience with research is generally positive. This ascertainment supports the view that school teachers need to acquire research experience in order to improve their professional learning.

Previous research tried to investigate individual factors that might be associated with positive attitudes towards educational research. Beycioglu et al. (2010) and Ekiz (2006) did not find any statistically significant result regarding demographic characteristics. Everton et al. (2002) found a statistically significant effect of educational experience. Specifically, school teachers with ten to twenty years of educational experience held a more positive attitude towards the value of educational research.

### **3. Focus of the study**

The aim of the present study was to explore the association between teachers' research experience and attending methodology and statistics courses with their attitudes towards educational research.

### **4. Method**

We used convenience sampling (Robson, 2002) and self-reported questionnaires completed by school teachers working in primary schools in various Greek areas.

#### **4.1. Participants**

The sample consisted of 190 primary school teachers, while 125 were women (66%). Most of them were older than thirty years old (16% were 31-40 years old, 34% were 41-50 and 6% were over 50y). Thirty seven percent of the participants had up to five years of educational experience, 37% had 6-15 years and 24% had more than 15 years of educational experience. Almost half of the participants were working in urban schools, while the others in rural areas. Thirty six school teachers were working in small primary schools (up to 3 classrooms), in small Greek schools teachers teach in two or three grades together, 75 in medium sized primary schools (4 to 6 classrooms) and 76 in large primary schools (over 6 classrooms). Two out of three teachers (66%) had attended a research methodology course and 59% had attended a statistics course. In total, 40% of the participants had some experience in conducting research- either a small scale research for their thesis or a research project.

#### **4.2. Measures**

The questionnaire included a 5-point Likert type scale with 29 items measuring different aspects of teachers' attitudes towards educational research. The scale was mainly based on the instrument used by Williams and Coles (2003). Exploratory factor analysis of the responses suggested four attitudinal components: 1. Lack of knowledge and interest in educational research (Cronbach's  $\alpha=.828$ , 9 items), (i.e. "I don't have the skills to make use of research", "I do not see how reading research could be of benefit to me"), 2. Usefulness of educational research (Cronbach's  $\alpha=.812$ , 6 items) (i.e. "Research is valuable in improving teaching quality", "Teachers become more effective through their involvement in research"), 3. Lack of reliability and applicability of educational research (Cronbach's  $\alpha=.764$ , 7 items) (i.e. "Much of the research I read

bears no relation to practice”), 4. Difficulties in accessing educational research (Cronbach’s  $\alpha=.769$ , 7 items) (i.e. “I do not read research because my school does not have a school library”).

## 5. Results

### 5.1. Dimensions of teachers’ attitudes towards educational research

Although most teachers (about 70%) have positive attitudes towards the usefulness of educational research, about half of the teachers are concerned about the reliability and applicability of educational research and 30% of them declare lack of knowledge and interest (see Figure 1).

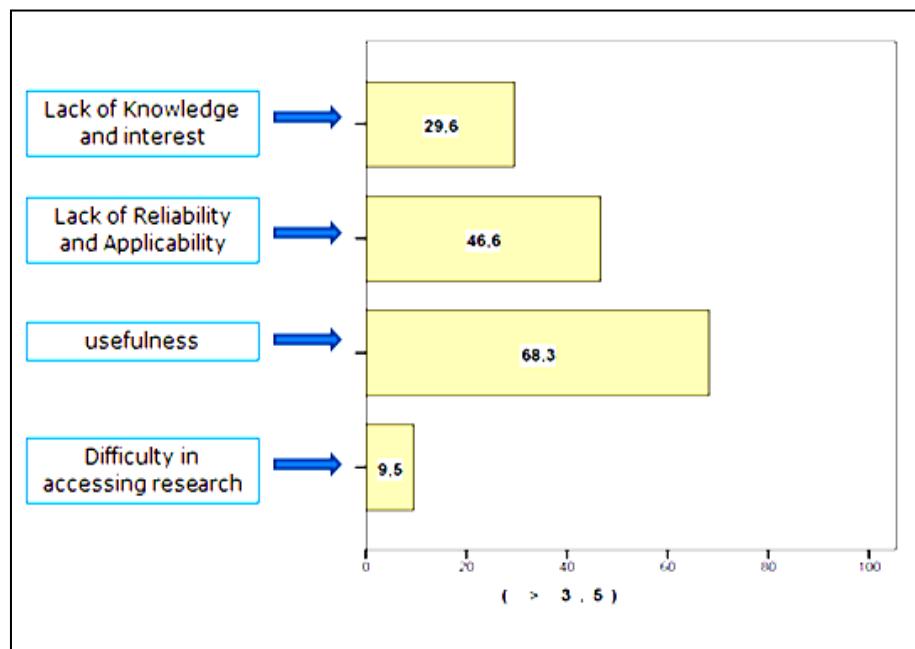


Figure 1: Dimensions of teachers’ attitudes towards educational research

### 5.2. Teachers’ attitudes towards educational research in relation to their research experience

There is a significant difference in the factor “lack of knowledge and interest”, between teachers who have research experience and those without [ $t(188) = -2,345, p = 0,016$ ]. Teachers with research experience have less negative attitude ( $M = 2.05$  versus  $M= 2.47$ ). A similar effect of research experience was found for the factor “Lack of Reliability and Applicability” [ $t(188) = -2,395, p = 0,018$ ]. Teachers with research experience have a less negative attitude towards reliability and applicability of educational research ( $M= 3.02$  versus  $M= 3.39$ ). Finally, a statistically significant difference was found in accessing Educational Research [ $t(187) = -2,142, p = 0,033$ ]. Teachers, who have some research experience, report fewer difficulties than those who do not have experience in conducting research ( $M= 2.66$  versus  $M= 3.06$ ).

**Table 1**  
*Teachers' Attitudes towards Educational Research in Relation to their Research Experience*

Attitudes towards educational research	Research experience				
	YES N=76		NO N=114		P
	M	SD	M	SD	
1. Lack of Knowledge and interest	2,05	.66	2,47	.75	.016*
2. Usefulness	4,07	.68	3,8	.64	.074
3. Lack of Reliability and Applicability	3,02	.91	3,39	.65	.018 *
4. Difficulty in accessing research	2,66	.88	3,06	.78	.033 *

### **5.3. Teachers' attitudes towards educational research in relation to methodology courses**

The only statistically significant difference concerns the factor “lack of knowledge and interest” [ $t(186) = -2,439, p = 0,016$ ]. Teachers who have attended Research Methodology courses have less negative attitudes than those who have not ( $M = 2.33$  versus  $M = 2.61$ ).

**Table 2**  
*Teachers' Attitudes towards Educational Research in Relation to their Methodology Courses*

Attitudes towards educational research	Methodology courses				
	YES N=76		NO N=114		P
	M	SD	M	SD	
1. Lack of Knowledge and interest	2,33	.77	2,61	.68	.016 *
2. Usefulness	3,87	.64	3,76	.66	.259
3. Lack of Reliability and Applicability	3,32	.73	3,39	.63	.554
4. Difficulty in accessing research	3,0	.84	3,04	.72	.703

### **5.4. Teachers' attitudes towards educational research in relation to statistics courses**

We found a statistically significant difference in terms of difficulty in accessing research [ $t(187) = -2,507, p = 0,013$ ] as well as in the lack of knowledge and interest [ $t(187) = -4,870, p < 0,001$ ]. Teachers who have attended statistics courses have less difficulties in accessing research ( $M = 2.89$  versus  $M = 3.19$ ) and are more interested and knowledgeable about educational research ( $M = 2.21$  versus  $M = 2.72$ ), respectively.

Table 3

*Teachers' Attitudes towards Educational Research in Relation to their Statistics Courses*

Attitudes towards educational research	Statistics courses				
	YES N=76		NO N=114		P
	M	SD	M	SD	
1. Lack of Knowledge and interest	2,21	.68	2,72	.75	<0,001 **
2. Usefulness	3,91	.63	3,73	.67	.060
3. Lack of Reliability and Applicability	3,27	.73	3,45	.62	.077
4. Difficulty in accessing research	2,89	.80	3,19	.77	.013 *

### **5.5. Teachers' attitudes towards educational research in relation to school type**

School size is associated with both 'knowledge and interest in research' [ $F(2,183) = 4,507, p = 0,012$ ] and 'usefulness of research' [ $F(2,184) = 4,047, p = 0,019$ ]. Teachers in small schools are more interested and knowledgeable ( $M = 2.12, M = 2.38$  and  $M = 2.57$ ) and have more positive attitudes towards usefulness of educational research ( $M = 4.1, M = 3.81$  and  $M = 3.73$ ).

Table 4

*Teachers' Attitudes towards Educational Research in Relation to School Type*

Attitudes towards research	School type						P	
	Small schools N=36		Median schools N=75		Large schools N=76			
	M	SD	M	SD	M	SD		
1. Lack of Knowledge and interest	2,12	.66	2,38	.69	2,57	.79	.012*	
2. Usefulness	4,10	.59	3,81	.66	3,73	.64	.019*	
3. Lack of Reliability and Applicability	3,42	.75	3,35	.61	3,3	.74	.701	
4. Difficulty in accessing research	3,1	.84	2,97	.79	3,02	.79	.726	

### **5.6. Teachers' attitudes towards educational research in relation to school area**

School area is associated only with the attitudinal dimension of 'usefulness' [ $F(3,184) = 3,161, p = 0.026$ ]. Teachers working in large urban centers see research as less useful compared to those who work in villages ( $M = 3.56$  versus  $M = 3.94$ ).

**Table 5**  
*Teachers' Attitudes towards Educational Research in Relation to School Area*

Attitudes towards research	School area							
	Big urban center N=39		City N=45		Small town N=30		Village N=74	
	M	SD	M	SD	M	SD	M	SD
1. Lack of Knowledge and interest	2,7	.92	2,41	.63	2,27	.69	2,35	.73
2. Usefulness	3,56	.73	3,85	.49	3,9	.62	3,94	.68
3. Lack of Reliability and Applicability	3,33	.86	3,37	.61	3,35	.61	3,35	.70
4. Difficulty in accessing research	3,2	.90	2,96	.57	2,8	.83	3,07	.83

## 6. Conclusion

Most elementary school teachers in Greece have some interest in educational research and think it is rather useful but about half of them think it is of limited applicability. Findings partly coincide with those of Beycioglu et al. (2010) and Everton et al. (2002). It seems that the gap between research and practice is still present (Broekkamp & van – Hout Wolters, 2007; Vanderlinde & van Braak, 2010).

In order to address the problem of research-practice gap, teachers' positive attitudes towards educational research should be enhanced, while negative attitudes should be eliminated. Research experience is associated with almost all attitudinal dimensions, therefore, it seems that teachers' involvement in conducting research has the potential to effectively transform their attitudes towards educational research. Furthermore, Methodology courses help them increase their knowledge about and interest in research but do not affect the other dimensions, while Statistics courses are more important as they also help teachers gain access to research findings.

Teachers who work in small rural schools take more interest in research. The fact that teachers working in small schools face more problems than those in big urban schools could explain the findings; they have to teach classes composed of students of different ages, needs and interests (Katsantoni, 2007) and, thus, face more difficulties in educational practice (i.e. low socio-economic pupils' status). Therefore, they need answers to more questions regarding their difficulties in instructional management, which they probably seek in research literature and eventually tend to appreciate the importance and usefulness of educational research. Another reason might be that they have more time for their professional development.

## **7. Recommendations**

Findings emphasize the need for more teacher training in both theory and practice of educational research. Teachers need to have proper training in both studying and conducting research; what is even more important is having in-service opportunities to be engaged in research. It is necessary that teachers be involved in long-term research projects (Broekkamp & van Hout-Wolters, 2007). Teachers' training and encouragement in their involvement in the research process must include a wide range of activities such as: a) a systematic recording of data (questionnaires, interviews), b) familiarity with reading research articles, c) participation in scientific conferences, d) use of research findings, such as innovative teaching practices published by educational researchers, d) systematic observation (e.g., student performance and behavior in order to produce "local knowledge" (Stremmel, 2002), e) collaboration between university and school. Furthermore, school administration should provide such incentive and support relative initiatives.

Since results of the present study suggest that teachers in small and rural schools hold more positive attitudes towards educational research, they should be given more opportunities for professional development in the area of educational research. On the other hand, teachers working in large, urban schools should be given more time and motives to be engaged in research.

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## ***7. Language Learning and Teaching***

## **7.1. For diversity against adversity: Second language teachers develop intercultural and research skills during an intensive course with immigrants in Greece**

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### **Abstract**

*This paper presents data from teachers' participation in an intensive project (lasting five weeks in Spring 2015) of teaching Greek Language and Culture to immigrants in seven Greek cities. For the project MATHEME, funded by the European Integration Fund, teachers had to develop a set of cross-language and intercultural skills in order to manage teaching in a multicultural audience, diversify them in terms of languages in practice and in social characteristics: mothers, people with disabilities, unemployed and illiterate immigrants. Teachers were asked to develop research skills to detect, analyze the linguistic, communicative, social and integrative needs of the target-public and adapt their teaching practices and techniques to these needs. The data discussed in this paper are collected in the written reports prepared and submitted by the teachers at the end of the course. The processing and analysis of such reports show the importance of teacher acquiring multilingual and multicultural competence and awareness.*

**Key-words:** Second language teaching and learning, multilingualism, research skills, intercultural competence, thematic data analysis

### **1. Introduction**

MATHEME is an acronym used for the project “Greek language, history and culture lessons to unemployed immigrants, mothers, disabled and illiterate people” within the framework of the 2013 Annual Work Programme of the European Integration Fund of

third-country nationals. This Programme is managed in Greece by the Ministry of Interior and Administrative Reconstruction and was implemented by the Greek Language Laboratory of the University of Thessaly.

The aim of the project was to design and teach the Greek language, history and culture courses to unemployed immigrants, mothers, disabled and illiterate people who live legally in Greece. The ultimate goal of this action was to strengthen the social cohesion among different cultural and language communities. Social cohesion in immigrant communities, in relation to education, presupposes actions for the (social, linguistic, professional) integration of immigrants and support for the development of cooperation with the host society.

The duration of the courses was 5 weeks, during which 80 hours were offered to each group, with a total of 410 immigrant students. The courses took place in seven capital cities of decentralized administration in Greece: Athens, Piraeus, Thessaloniki, Ioannina, Larissa, Heraklion. Each city offered courses in all three-language levels: beginners (including illiterate), intermediate (mothers, unemployed, disabled) and advanced (mothers, unemployed, disabled).

The project employed qualified and experienced teachers in teaching this target group. Before the beginning of the lessons, the Greek Language Laboratory of the University of Thessaly hosted an educational seminar, which was attended by the teachers of the project. The main goals of the seminar were to raise the teachers' awareness in the spirit of cooperation, understanding and mutual assistance of the Laboratory, the methodological orientation of the lessons and the introduction to the genuinely created, educational material "mathe me", in literate translation "learn me".

Teachers adjusted greek language teaching to students' needs. The primary objective was to strengthen the students' already existing skills and then develop language skills so as to respond to everyday communication contexts. Furthermore, an important goal was to develop knowledge and skills in the field of Greek history and culture.

At the end of every week, teachers were asked to submit a brief report on the most important information and reflection about the lessons as well as the schedule for the following week.

Upon completion of the lessons the teachers were asked to submit a free form report which should include the following:

1. Summary of Attendance: dates and times of lessons, location- change of location, responsibilities, contact with other fellow teachers, contact with other members of the project.
2. A written record of organizational and educational problems and the course of action taken to resolve them: organizational and educational problems.
3. Methodological issues regarding teaching and learning: remarks on the progress of the immigrants' linguistic integration, achievements, particularities and difficulties of the members of the group or the team in general.
4. Suggestions for improvements or changes in a potential new implementation of the project or relevant future projects of GreekLangLab.

## **2. Methodology**

The data analyzed consisted of 27 teachers' final reports. Emphasis was put on objectives of teachers' personal development of interlingual and intercultural skills (understanding, empathy, commitment, reflection) and cooperative skills (negotiation, collaboration, adaptation).

In order to analyze the data and create the scheme presented in the next section, we used the qualitative method of thematic data analysis, as presented in the work of

Boyatzis (1998) and elucidated in the work of Namey, Guest, Thairu, and Johnson (2008), Saldana (2009), Kitsiou (under publication), Androulakis, Kitsiou, and Ntasiou (under publication).

First of all, let's define thematic analysis itself and the three basic terms used in our research: code, theme and pattern. According to Boyatzis (1998):

"Thematic analysis is a process of encoding qualitative information. The encoding requires an explicit "code". This may be a list of themes; a complex model with themes, indicators, and qualifications that are casually related; or something in between these two forms." (p. 4)

The theme, according to Boyatzis (1998), "at the minimum describes and organizes possible observations or at the maximum interprets aspects of the phenomenon" (p. 4). What Saldana (2009) describes as code, is very close to what in our research is called "pattern": "a code [...] is [...] a word or a short phrase that symbolically assigns a summative, salient, essence-capturing, and/or evocative attribute for a portion of language-based [...] data" (p. 3). More specifically, Kitsiou (under publication) describes pattern as following: "Patterns are essentially the characteristics of each theme and can be traced only when all the units of data are available". Kitsiou has also previously used the terms code, theme, pattern and applied the same hierarchy among them (in terms of the project Econolang).

In short, the code is the more general idea that includes themes, which are more specific yet sometimes (not always) it is possible to detect patterns within themes. Although codes and themes, due to their more general meanings, are prone to be found alike in studies with equivalent data or goals, the patterns are more specific and come up only because they existed and were found in the particular analyzed data.

In our research, the codes and the themes were developed as a combination of the following: a. They were inductively generated from the raw information and the initial landmark-questions given to the teachers in order to vaguely structure their reports around them (but not necessarily), and b. they were deductively generated from prior research. The latter is described by Boyatzis (1998) as "prior-research-driven code development" according to which "Codes used by other researchers and their findings provide the most direct help in developing a code from prior data or prior research." (p. 37).

After taking into careful consideration the scheme used by the above mentioned research and the landmark-questions given initially to the teachers, we constructed an initial scheme that would correspond to the needs of our own research. Next, the scheme was tried out; it was determined that it worked fine for our data. According to that, we moved on with the analysis of the corpus of our data. After this second stage was completed, we moved on with tracing patterns and changing some of the themes, so that the titles can better match the included units of data.

Last but not least, we should explain the following codification we came up with. Each unit of data taken was given a unique "code-name" at the end of it. That was done to serve three purposes; first, it was of utmost importance that no connection with the teachers and/or the students would be possible, so as to respect the anonymity of each person. Secondly, we wanted to make sure it would be possible and easy at any point of this research to relate each unit of data to the original report from which it was taken. Finally, we wanted the "code-name" to give the reader as much information as possible at a single glance. So, we ended up with the following pattern of "code-naming": the first two letters are the initials of each city, where the lessons took place. Namely, At stands for Athens, Th for Thessaloniki, and so on. Next to that, the letter L for Language

or the letters H&C for History and Culture follows, which reflects the teacher profession that wrote the report. Then, the mentioning of the class' level, A0, A1, A2, comes. In some cases, it became necessary that an "a" or "b" was added at the end of it, so as to differentiate between two different classes in the same city, on the same language level with the same teacher. At the end of the "code-name", there are the teacher initials. Here is an example: the "code-name" La\_H&C\_A1&A2\_AZ means that the lessons took place in Larissa and the teacher named A.Z. taught Greek History and Culture in classes A1 and A2.

### 3. Research

The thematic data analysis, applied as described above, led to the following scheme.

Code (henceforth: C) 1: Identification by the teachers of the classrooms-as-small-cultures characteristics

Theme (henceforth: T) 1.1 The composition of the students' group

- Pattern 1.1.1: The composition of the group based on students' origin / language
- Pattern 1.1.2: The composition of the group based on students' characteristics
- Pattern 1.1.3: Changes in the composition of the students' group
- Pattern 1.1.4: Cultural heterogeneity of the students' group
- Pattern 1.1.5: General characteristics of the students group

T 1.2 The courses' context

- Pattern 1.2.1: The courses' context as a facilitator of the educational process
- Pattern 1.2.2: The courses' context surpasses the physical setting of "school"
- Pattern 1.2.3: Practical difficulties in the courses' environment
- Pattern 1.2.4: Plain report of the places where lessons took place

T 1.3 Students' literacy level

T 1.4 Students' habits and attitudes

- Pattern 1.4.1: Students' habits and attitudes towards school
- Pattern 1.4.2: Respect and tolerance for the other students' opinions
- Pattern 1.4.3: Students' habits and attitudes towards Greek natives and state
- Pattern 1.4.4: Students' habits in extracurricular context
- Pattern 1.4.5: Students' personal preferences and choices

C2: Exploitation of the classrooms' small cultures' characteristics by the teachers

T 2.1 Formatting the objectives' setting

- Pattern 2.1.1: Objectives in relation to the connection of first and second language
- Pattern 2.1.2: Objectives according to students' needs and interests
- Pattern 2.1.3: Objectives in relation to school environment and a more general environment of acceptance and integration
- Pattern 2.1.4: Objectives in relation to developing literacy skills

T 2.2 Teaching choices (methods and techniques)

C3: Coping with problems and crises

T 3.1 Bureaucratical hindrances

- T 3.2 Organisational & technical difficulties
- Pattern 3.2.1: Presence of children as a drawback
  - Pattern 3.2.2: Student's family and working obligations
  - Pattern 3.2.3: The short duration of the program's implementation as drawback
  - Pattern 3.2.4: Procedural issues / difficulties

T 3.3 Difficulties in terms of the educational process

- Pattern 3.3.1: Competitive relations among students
- Pattern 3.3.2: Reactions to the educational process
- Pattern 3.3.3: The heterogeneous learning level
- Pattern 3.3.4: Difficulties in relation to the project's material
- Pattern 3.3.5: Racist remarks towards immigrants

C4 Assessment of the educational intervention

T 4.1 Components (terms and criteria) of a successful teaching intervention

- Pattern 4.1.1: Emotions
- Pattern 4.1.2: Teaching techniques

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Pattern 4.1.3: The institution of mediators and the bilingual teaching

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T 4.2 Response to the educational process and the educational material

Pattern 4.2.1: Students' response to the educational process

Pattern 4.2.2: Response to the teaching materials

Pattern 4.2.3: Students' emotional development

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T 4.3 Learning outcomes and changes in attitudes

Pattern 4.3.1: Regarding students' literacy level

Pattern 4.3.2: Regarding students' relations and emotions

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T 4.4 Teachers' professional development and emotional state

Pattern 4.4.1: The cultural differences as a way of exchanging experiences

Pattern 4.4.2: Children's presence as a new aspect of teachers' professional development and adaptability

Pattern 4.4.3: Positive emotions in regard to the project

Pattern 4.4.4: Negative emotions in regard to the project

Pattern 4.4.5: Reasons and events of professional development

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C5 Teachers collaboration

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T 5.1 Collaboration between teachers

T 5.2 Collaboration between teachers and mediators

T 5.3 Collaboration between teachers and the coordination team

T 5.4 Collaboration between teachers and school

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C6 Teachers' proposals

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T 6.1 In regard to the project

Pattern 6.1.1: Continuation of the project with longer duration

Pattern 6.1.2: Emphasizing the need for implementing equivalent projects

Pattern 6.1.3: Acquisition of the Greek state certificate of language proficiency

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T 6.2 In regard to the teaching material

Pattern 6.2.1: Proposals about the teaching material of Greek language

Pattern 6.2.2: Proposals about the teaching material of Greek history and culture

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T 6.3 In regard to the improvement of technical & organizational issues

Pattern 6.3.1: Composition of the groups

Pattern 6.3.2: Procedural and technical issues

Pattern 6.3.3: Need for more students' visits to historical, cultural and everyday sites

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T 6.4 In regard to further teachers' education and feedbacks

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Some example units of data extracted by the themes or patterns mentioned in the table can be found below.

*Pattern 2.1.2*

“My responsibilities included teaching the Greek language in an experiential way, adjusted to the trainees' need to respond to everyday communication contexts. Therefore, apart from the teaching of basic grammar phenomena and some necessary vocabulary, mainly because the students requested this – they were illiterate in the native language and needed some language tools in order to express themselves – the teaching was based on the experiential learning of language.” At\_L\_A0\_AR

*Pattern 2.1.3*

“The cognitive part of teaching, however, gave its place to the pedagogical one as my priority was to boost the students' confidence, create a pleasant and familiar environment, an appealing teaching style, and promote their cohesion and cooperation.” At\_L\_A0\_AR

*Theme 2.2*

“I often used pedagogical techniques based on theatre, the theatrical play and role-playing, in the advanced class where I was the main teacher, in order to achieve the desirable attachment among the members of the team and provide the essential circumstances, so that all the members of the class will be able to express themselves orally, in writing, and even theatrically or kinetically.” Th\_L\_A1\_EK

#### *Pattern 4.3.2*

“As part of the project, the students did not only develop linguistic skills, but also aesthetic, social and communicative ones. Another important factor was their integration in teams that encouraged them to express their experiences and emotions; through experiential learning they were encouraged, while their self-confidence was boosted.” Pa\_Lang\_A2b\_DG [M2]

#### *Pattern 4.4.1*

“I believe that focus on children worked positively and helped me learn more about the team. It was made clear that the upbringing of the children is a matter of the community, as when a mother scolded a child, another one could come to its comfort (an act that many parents in Greece would disapprove of), while all mothers were “aunties” (even me). The great value they attach to the existence of children in their lives is evident by the following: most of the times instead of calling the name of the mother, they say mama Peculiar or mama Divine, in other words, instead of Becky she is “the mum of Peculiar” or “the mum of Divine”.” Th\_L\_A0\_AP

#### *Pattern 4.4.3*

“[...] it was incredibly moving to see them struggling so much in order to acquire basic literacy skills that they were not able to acquire before because of the difficult circumstances.” He\_L\_A2\_MS

#### *Pattern 4.4.4*

“Unfortunately, the restrictions that were set by the Ministry regarding the exclusion of people who did not meet the legal criteria, leaving out asylum seekers or people who fell short of some of our documents, brought us up against the harsh reality of institutional marginalization. Addressing these issues was mainly the constant aim of our support team. However, we, the teachers, were summoned each time to transfer information to the people involved, which always brought us to the unpleasant position of trying to explain things that even ourselves were not aware of.” Th\_L\_A1\_CP

#### *Pattern 6.2.1*

“We can improve and enrich the teaching material ‘Matheime’, by incorporating grammar rules, exercises, examples. That is, it's better to have an already existing material rather than consult and use other educational resources. Also, a student's workbook with exercises would be best. Moreover, spelling exercises exactly as they exist in the books of Greek language for the primary school is a good practice.” He\_L\_A1\_EK

#### *Pattern 6.3.2*

“it would also be necessary and extremely important the disclose the deliverables to the teachers from the outset, so that the necessary actions would have taken place in time. Personally speaking, I am afraid that unbelievable testimonials about migration were lost, they could have been recorded, and a collection of papers that were returned to their owners!!!.” He\_H&C\_A1&A2\_MS

## **4. Discussion**

The thematic analysis of final reports produced by the teachers involved in the MATHEME project illuminated, among others, the following issues:

- Giving voice to the teachers before, during and after teaching in innovative projects proves to be a fruitful experience for both researchers and practitioners.
- Efficient teaching of a second language to immigrants by experiential learning has to go through discovering the target group, its background, its life and everyday problems and priorities.

- Language courses constitutes a challenging context for immigrants, while it is an opportunity for quick, personal and professional development for the teachers.
- As funded projects are often short, bridging programmes are needed to benefit both students and educators.

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## **7.2. A case of training second language teachers online: Affordances, constraints, advantages and achievements**

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### **Abstract**

*This paper focuses on an intensive online teacher training seminar addressed to teachers who were asked to teach in a Greek Language and Culture program for immigrants. The MATHEME project aimed to help teachers develop a set of cross-language and intercultural skills so that they could teach a multicultural audience. A two-day seminar was held online in order to inform the teaching staff regarding the design, organization and implementation of the project, the expected outcomes and the specific features of the project. The results of our analysis support the view that effective online teacher training presuppose consistent and meaningful participation in digital learning communities of practice.*

**Key-words:** ESL teacher training, online teacher training, e-class, chats

### **1. Background: GreekLangLab and the MATHEME project**

This paper is the result of teamwork. All the presenters are members of the Greek Language Laboratory of the University of Thessaly, in Volos. The Greek Language Laboratory was founded in 1999, as part of the Department of Primary Education at the University of Thessaly. The Laboratory consists of professors, researchers, students, and teachers who participate, often voluntarily, in its activities and projects. Among others, its main priorities include:

- The dissemination and teaching of Greek as a second and foreign language
- The study and analysis of Modern Greek through the perspective of sociolinguistics
- The scientific contribution to educational and linguistic policy issues.

Related to its overall action, in early 2015 the Greek Language Laboratory was selected, after a call for proposals, to implement the project 1.3 b / 13 under the annual programme of the European Integration for 2013, aiming at the integration of nationals from countries outside the European Union, which was managed in Greece by the Ministry of Interior and Administrative Reconstruction. More specifically, the proposal

refers to “courses of Greek language, history and culture to immigrants of the following categories: unemployed, mothers, persons with disabilities (PWD) and illiterates” for a target group of around 300 legally resident immigrants. The project was then named as MATHEME, which came out from the corresponding Greek phrase “Greek language courses for immigrants”. The 80-hour courses organized in three different levels (beginners, intermediate and advanced level) took place in the following seven (7) cities, the capitals of the Decentralized Administrations around the country: Athens, Larissa, Ioannina, Patras, Piraeus, Thessaloniki, and Heraklion.

It has to be noticed that immigrants’ participation was voluntary and free of any financial obligations. Conversely, a small remuneration and a certificate of successful completion of the courses cycle were addressed to students who attended the courses assiduously.

Concerning the teaching methods, the classes used brand new and innovative teaching materials, created by the project’s team according to task-based approach, and adapted to the participants’ needs as recorded by the research team of the project through interviews and *in situ* visits in the respective cities.

The ultimate purpose of the action was to enhance social cohesion and harmonious coexistence between communities with different cultural and linguistic backgrounds. In this context, the effective learning of Greek as a second language, as well as the contact and the acquisition of knowledge and skills in the field of Greek history and culture, are considered to be an important factor.

The teachers, who worked for the MATHEME project, were chosen after a formal evaluation of their CVs. More specifically, the necessary skills required for the teachers of the Greek language were the following: a degree in the field of languages or education, a postgraduate diploma in teaching Greek as a second language, certified experience of at least two years in teaching Greek as a second language to immigrant audience and optionally teaching in educational programs based on the principles of task-based teaching. Based on the same rationale, the teachers for Greek history and culture should have had the following skills: a degree in the field of humanities or social sciences, a master degree in Modern Greek history or culture or their teaching, certified experience of at least two years in the teaching of Modern Greek history or Modern Greek culture in immigrant audience and optionally teaching in educational programs based on the principles of task-based teaching. Fluency in a language other than Greek was required for both categories.

## **2. Teacher training: Process and principles**

The aim of teacher training has to be high quality education. With a view to getting the best possible results, the teacher training process had to take into consideration some “prime elements”, such as: the trainees’ personal attributes, the students’ individual and group attributes and the nature of the educational process in general (Strevens, 1974). The MATHEME teacher training focused on effective teaching of Greek as a second language (and, to a lesser extent, of Modern Greek history and culture) to immigrants.

To do so, training in the MATHEME included a four-hour online webinar. For the implementation of the webinar, members of the support team of the Greek Language Laboratory got in contact with the Centre of the Electronic Governance of the Aristotle University of Thessaloniki in order to get permission to use its online platform <https://it.auth.gr/el/academicSupport/eLearning>. 41 teachers who attended the webinar got informed about the project and discussed a variety of other subjects.

After that, during the first week of the implementation of the courses, both teachers and students were invited to evaluate their experience from the first stage of the project

and pose their questions and demands for the rest of the project. As a result, a second webinar was set to provide solutions and proposals to the issues that came up. In other words, the meeting had a form of feedback to the coordinating team of the project. For practical reasons, this second webinar was organized in two distinct parts, the first with collaborators from Athens and Piraeus, and the second with teachers from Patras, Heraklion, Ioannina, Thessaloniki, and Larissa.

The first webinar focused on seven basic work streams. More precisely, the support team started the meeting with some remarks about the technical settings and a brief reference to the context of the project. Afterwards, the attendees discussed the organization of the classes and the teachers' and mediators' role in order to achieve the best possible results. Towards the end of the webinar, the scientific coordinator presented some of the pedagogical and methodological principles that our laboratory follows. Those principles were accompanied with a short demonstration of the teaching material created for the MATHEME project.

Subsequently, the content of the twofold feedback webinar can be summarized in three units:

- the definition of the students' level in Greek language
- the different options and opinions for the use of the teaching material proposed and
- a set of other important matters concerning the process of the project.

As mentioned above, during the first webinar, the project's pedagogical and methodological principles were presented and commented; they concern the "open" spirit of the classes and the local solutions to issues that arise. Furthermore, the differentiated teaching, the students' autonomy and the sensitivity and utilization of the linguistic portrait –based on the detection during the courses- are of great importance for the objectives of the project. In addition to these, the principles also include several linguistic aspects, such as mutual understanding between different languages, and the transition from oral to writing and literacy skills. Moreover, the support team suggested that the teachers should invest in students' previously acquired skills in combination with the development of strategies and techniques which are connected with the requirements of the courses of the project.

### **3. Discussion**

The webinars were definitely a very informative and interesting part of the MATHEME project. All the participants felt free to express their opinions and shared their thoughts and worries about the courses. The questions posed by the teachers concerned both procedural and pedagogical matters.

At the beginning of the first webinar, the distribution of the educational material, the kick-off, the duration and the space for the implementation of the courses, as well as the contracts and insurance issues, were the dominant procedural questions. On the other hand, the pedagogical questions about the task-based method required more emphasis and discussion due to their complexity and importance.

After the first week of the courses, numerous questions concerning the educational subjects were expressed by the project collaborators. Those subjects were the main issues developed during the feedback meetings. To be more specific, the teaching of grammar was a controversial point. The students expressed their need for grammar and orthography through exercises. Similarly, the teachers considered the practice of grammar, through drills and exercises, to be necessary. In order to help students develop this kind of skill, teachers used material from previous programs that were addressed to immigrants. In fact, negotiations between the coordinator and the teachers were needed, as the background of the application accepted for funding postulated that task-

based teaching and learning has no or very limited compatibility with explicit grammar teaching. Evidence from research projects in Greece and elsewhere was used to persuade teachers about the low suitability of explicit grammar for the development of communicative and social skills (Seowon, 2004). So, the project principle for “grammar through tasks” had to be reconceived and applied as “tasks with a bit of grammar”.

The second important pedagogical thread, during the webinars, was about the educational material developed by the project team. The lack of contact, adaptation time and technical equipment was the main obstacles that teachers had to face. They did not have enough time to get acquainted with the proposed material and its way of use. However, it was clarified that this material should not be taught in its entirety, while teachers were free to choose and adapt every chapter to the needs of their groups. In addition to these, the attendees made their own proposals on the material. More specifically, although they found the MATHEME material very good for the oral skills, they suggested, for instance, that adding subtitles to the videos for our deaf students and recording dialogues with the voice of other immigrants would be more helpful to facilitate the listening exercises.

Many teachers commented about the level of the material for beginners, which they considered too high. They claimed that there were lengthy dialogues which were hardly understood by the students. The mediators posed the heterogeneity in the classes as a problem, which very often complicated the teacher’s work. As a consequence, some help from the classmates which had the same nationality or spoke the same language was provided very often.

Other practical problems in terms of the implementation of the lessons were caused by the presence of the migrants’ children, the difficulty of attendance by the migrants due to the season (e.g., May and June are regarded as a good period for temporary work).

Regarding the students who were illiterate in their mother tongue, specific questions were raised and specific guidelines were given. Besides, as most of the students of the beginner level could not speak Greek fluently, sometimes the teachers used English or French and, subsequently, adaptation of the teaching material had to be performed. In addition, it was observed that the educational system that the students were familiar with had a great impact on the courses.

Despite the above concerns, the teachers underlined that the students’ interest for the courses was very high, as well as their keenness on participation in the lessons. At the same time, the teachers trying to identify the reasons for this high interest attributed it to the overall orientation and priorities of the project, the interesting topics and materials around which the tasks were developed. In this context, differentiated and experiential teaching appeared to the teachers’ view as a rather natural way of constructing their teaching practice.

#### **4. Concluding remarks**

The effective online teacher training presupposes consistent and meaningful participation in digital learning communities of practice and a thorough understanding of the role of the citizenship that, civility, digital literacy and openness serve in successful online instruction. Moreover, appropriate participation in the online sessions was usually linked with communication and creation skills.

In conclusion, teachers who participated in the training seminars of the MATHEME project reported that the training process and the project in its totality helped them raise awareness of three facets:

- Methodological awareness attached to understanding and applying important language teaching principles, such as task-based teaching and learning;
- Intercultural awareness, regarding the immigration phenomenon, the immigrants' needs and everyday life in Greece;
- Professional awareness linked to choice making and decision making in order to assure effectiveness and appropriateness in language teaching, mainly through processes, such as negotiation and mediation.

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### **7.3. Rethinking teacher education: The case of the EFL primary school teachers Community of Practice in Delta School District of Athens (DACoP)**

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#### **Abstract**

*This paper presents some results from a case-study based research, which examines a virtual community of practice of English language teachers. The community was developed under the aegis of the English Language and Literature Department of the University of Athens and was instructed and coordinated by the EFL school advisor<sup>1</sup> of Delta Athens school district. The first part of this exploratory study tells the story of the newly launched community and reveals the challenges faced in the first six months of its implementation. The second part attempts to assess its effectiveness and the values created for its members.*

**Key-words:** Communities of practice, continuing professional development, mentoring, hybrid teacher education, third space

#### **1. Introduction**

In Greece, although there is a plethora of learning opportunities for teachers, teacher education is characterised by a lack of coherence, systematicity and continuity, and failure to respond to teachers' real needs (Karavas & Papadopoulou, 2014). This paradoxical situation does not enhance professional learning and personal fulfillment. In fact, teachers often feel under-supported and under-prepared for the requirements of the modern school and heavily criticise national teacher training policies.

The knowledge they receive in their pre-service training at university does not dramatically change their well entrenched beliefs and pre-existing images of teaching, which are often intuitive and inconsistent (Agathopoulou, 2010; Karavas & Drossou, 2010). On a similar note, their in-service professional development experiences involve seminars, lectures, conferences and brief workshops on a wide range of issues, but these sit and get, one-off sessions, traditionally conceived as the "one size fits all" approach, are not enough to bring about "sustained, substantive change in practice" (Abadiano & Turner, 2004, p. 87).

#### **2. Review of literature**

##### **2.1. A hybrid model of teacher education**

In considering the terms *teacher training* and *teacher development*, certain distinctions emerge but, as Ur (1997) puts it, this dichotomy is oversimplistic. Numerous researchers speak of different models of teacher training and development. Wallace (1991) distinguishes between the Applied Science model (the focus is on theory), the Craft model (the focus is on practical skills) and the Reflective model (the focus is on experiencing, reflecting, conceptualising and experimenting). However, experiencing and reflecting alone (see inner circle in Figure 1) do not necessarily lead to knowledge and discovery because learning from one's self is limited. Personal experiences can be enriched by theory and research as well as the experiences of others

and their critical observations (see outer circle in Figure 1). Training and development, therefore, are more effective when they complement each other (Ur (1997).

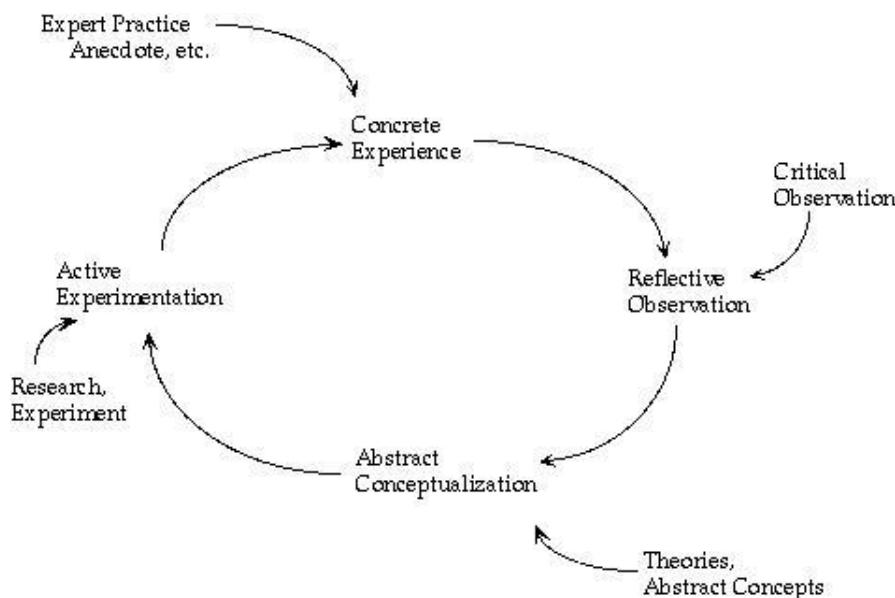


Figure 1: A balanced model of teacher training and development

In this paper we examine a hybrid model of teacher education, which connects learners' practical, theoretical and reflective experiences (Jakovlevic, Buckley, & Bushney, 2013). The specific model has a lot in common with a hybrid education model, which Zeichner (2010) identifies as "third space". According to Zeichner (2010) third spaces "bring practitioner and academic knowledge together in less hierachal ways to create new learning opportunities for prospective teachers" (p. 92). In this case, the third space for bringing practical (classroom-based) and theoretical (academic) knowledge together is the learning space of a community of practice.

## 2.2. Communities of practice

Based on social constructivist theories of learning and other recent theories, i.e. Situated Learning (Lave & Wenger, 1991), which have provided the theoretical background for their creation, Communities of Practice (CoPs) are teacher education models, in which teacher learning emerges through action, reflection, interaction and ongoing feedback (Wenger, McDermott, & Snyder 2002). The values and aims of CoPs resonate with current thinking on teaching and learning: activity, communication, synergy (networks and partnerships), goal orientation, the use of technology, the role of educator as facilitator/coach/mentor, engagement, exploration, critical opinion, sharing, reflection, feedback, distributed power (feedback provided by every participant).

It is evident that the social aspect of learning is a key element in this model. Professional learning is not only seen as a mental, intrapersonal, psychological activity. It is also seen as a social, collaborative, interpersonal, cultural activity. It is through critical reflection on their own beliefs and dialogic reasoning with colleagues about theories, models and methods that adults transform their frames of reference and develop their personal teaching theories (Mesirow, 2009). In this framework, the educator, who acts as a mentor, is an agent of change.

Furthermore, collegiality facilitates understanding and implementation of new strategies and supports teacher change (Klingner 2004). Teachers need to see the relevance of a new theory or strategy to their situation, adapt it to their needs and develop a sense of ownership, promoting its sustained use in the classroom. They also need to know if other teachers and experts are supportive of the new practice and how they can find materials and resources.

Within this framework, what this paper aims to contribute is an enhanced understanding of teacher communities of practice and teacher education programs by answering the following questions:

1. How does the community evolve within the professional learning program?
2. How can we assess the effectiveness of such a program?

### **2.3. The story of the community**

In 2014, the Research Centre of English Language (Rcel) of the University of Athens moved beyond the traditional paradigm of continuing professional development (CPD) to consider a wider framework of professional development and learning, CoPs. The community's learning space was an online CoP platform, named *togather*<sup>2</sup> (Figure 2).

Figure 2: An instance of the home page of the platform

The screenshot shows the 2gather platform interface. At the top, there is a navigation bar with the 2gather logo, user profile (Hello Alexia), and links for LOG OUT, GROUPS, FORUM, ANNOUNCEMENTS, MEMBERS, ACTIVITY, and ABOUT 2GATHER. Below the navigation bar is a group profile for 'ELTeachers D' Athens C...', which is a Private Group with 80 members, active 9 hours, and 15 minutes ago. The group description is: 'This is the group for ELTeachers of D' Athens'. There are buttons for Leave Group and Group Admins. Below the group profile is a main content area with a green header 'May-June task: Lesson plan'. Underneath the header, there is a post by a user named 'AUTHOR' (Alexia) from May 20, 2015 at 12:16 am. The post content is: 'Dear colleagues, Having read C.A. Tomlinson's The Differentiated Classroom: Responding to the needs of all learners, ... for your class. Discuss how the specific lessons can account ...'. There are buttons for Subscribe and Favorite.

Figure 3: An instance of the forum of DACoP

In an attempt to implement this innovative form of teacher development, many challenges and key issues in community management had to be addressed.

- How can we motivate teachers to participate? How can we sustain their engagement? How can we establish recognition of their participation?
- How can we design a CPD program within the framework of a CoP? What kind of resources can we use? How can we support teachers in addressing a topic?
- What kind of feedback and scaffolding can we provide?

In September 2014 an invitation was sent to the English language teachers in Delta Athens school district to join in as members of the community. About 35 teachers signed up initially. The mentor/educator initiated a set of topics to encourage discussion among them in the group forum (Figure 3). After 2-3 new topics and still no involvement on the part of the teachers, the mentor realised that the community had to be activated to ensure member participation and involvement. As Burns (2011) puts it, community of any sort does not develop *ex nihilo* - it must be carefully cultivated.

According to Corso and Giacobbe (2012), to activate a virtual community, we need to improve individual involvement and enhance social digital literacy skills needed for the functioning of the online CoP. To achieve these two goals, in January 2015 the mentor invited teachers to participate in a 24-week online CPD programme with the aim to give them a motive for participation. To enhance social digital literacy skills, it deemed necessary to organise a face-to-face meeting in order to inform the participants about the goals of the program and the community and familiarise them with the platform features. The meeting took place in February 2015 and Delta Athens Community of Practice (hereafter DACoP) was launched.

With the help of the coordinator of the platform, the mentor helped all the teachers to register, create or edit their profile, initiate and respond to a forum topic, learn how to attach files/images/videos to the posts, create an active link and send messages. The rules and roles were explained. Teachers would have to access the training materials, carry out the activities and submit their responses. They would also have to provide feedback on at least two peers' responses.

## 2.4. Description of the course

The CPD program was entitled “Materials Design in the EFL primary classroom” and was built around the topic of differentiated instruction in TESOL. It included a set of lessons, which were conducted in stages (Table 1). During each stage, a specific pattern was followed: the goals of that stage were presented, followed by the input materials and tasks (Figure 4). The tasks had a specific focus and sequence and were time bounded. With these tasks, the hybrid educator tried to create concrete linkages between theory and practice (Garrett- Holbert, McCalister, & Harris, 2014).

## Multiple Intelligences and Learning Styles

AUTHOR	POSTS	Subscribe	Favorite
 Alexia <small>Member</small> Topics: 20 Replies: 60	<p>February 9, 2015 at 12:07 am</p> <p><b>February schedule</b></p> <p>This month we will examine some key findings in human intelligence research and seek ways to activate the full spectrum of our intelligence capacities. The first goal is to develop an awareness that we do possess multiple ways of knowing and learning. The second goal is to learn techniques to include most intelligences in language teaching.</p> <p><b>1) February task 1 (Deadline 16/2/2015)</b></p> <p><b>What do you know about your intelligence?</b></p> <p>Please take the multiple intelligences quiz here:</p> <p><a href="http://www.literacynet.org/mi/assessment/findyourstrengths.html">http://www.literacynet.org/mi/assessment/findyourstrengths.html</a></p> <p>Take the learning styles quiz here:</p> <p><a href="http://www.educationplanner.org/students/self-assessments/learning-styles-quiz.shtml">http://www.educationplanner.org/students/self-assessments/learning-styles-quiz.shtml</a></p> <p>Discuss your results, using the Forum below. Tell us about your strongest and weakest intelligences and your preferred learning style. Tell us if you agree with the results.</p> <p><b>2) February task 2 (Deadline 23/2/2015)</b></p>		

Figure 4: Instance of a task

As mentioned above, the program was designed so that significant learning could be derived not only from the materials but also from the interaction and negotiation of the community members on certain issues. For that reason each stage ended with peer feedback. The mentor provided feedback systematically engaging in professional dialogue, analysing teaching practices and reflecting on the rationale underlying them.

**Table 1**  
*Programme Overview*

Stages of implementation
Stage 1: Multiple Intelligences and Learning Styles Resources: quizzes, articles, audio recording Activities: discuss results from quizzes, discuss questions that concern classroom practices and coursebook materials, reflective activities Artifacts: activities to accommodate different learning styles and MI in the classroom.
Stage 2: Differentiated Instruction Resources: presentation, lecture, articles, video Activities: reflect on the main ideas of the input materials and classroom practices Artifacts: responses to questions
Stage 3: The dynamics of relationships in schools Resources: painting, articles Activities: analyse a painting, design the steps of group formation Artifacts: scenario
Stage 4: A differentiated lesson plan Resources: book Activities: design a 90-minute lesson with rationale Artifacts: lesson plan

### **3. The method of the study**

The learning space of a community is a complex learning environment. To draw conclusions about its evolution and effectiveness, the participants' comments and artifacts (products) were used as primary data sources. Semi-structured interviews with the participants and a learning log were used to collect data about the participants' perceived benefits and the values created by the community. The data were analysed in terms of the following variables:

- the degree of communication and interaction among participants
- the degree of accomplishment of the predefined goals
- the completion or not of the course
- the degree and quality of the knowledge constructed as a result of the course
- the degree of the participants' perceived change and satisfaction

### **4. Main findings**

#### ***4.1. The degree of communication and interaction***

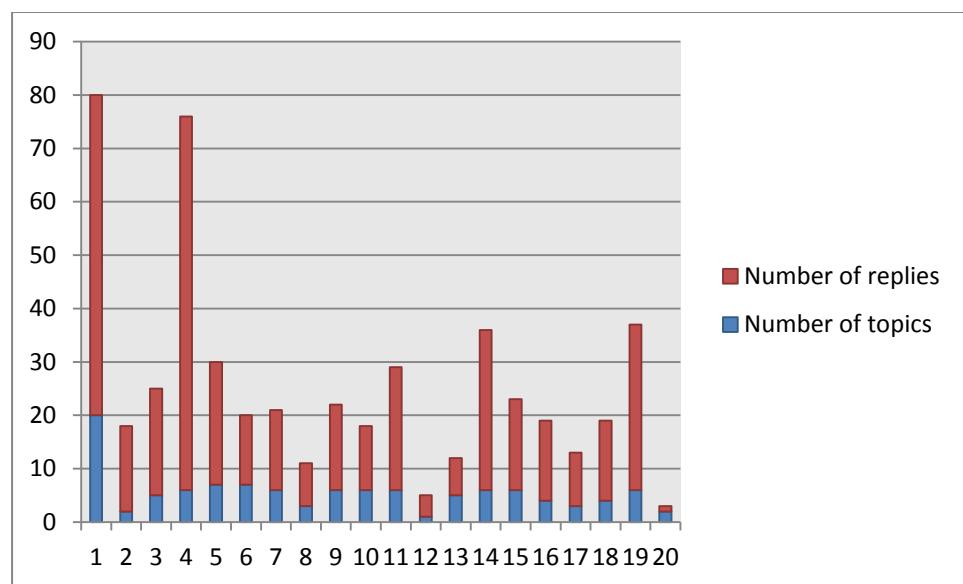
Within one year (from 09-2014 to 09-2015) the community attracted 66 members. 19 teachers participated in the course, 15 of whom accomplished all the activities during the study and were awarded a certificate of attendance. The data revealed that the specific CoP had a positive impact on the participants' professional learning. The analysis of the participants' communication and interactions showed that they were particularly active, interactive, creative and productive. Within the first month of the implementation of the community, the number of posts as well as the number of words per post rose dramatically (Table 2).

**Table 2**  
*Degree of Communication and Interaction*

February Tasks	Number of posts	Number of words
1	69	3,112
2	99	9,101
3	105	12,428

This dynamic growth continued throughout the six months (Table 3). Nearly all the participants initiated 6-7 new topics and replied to their peers on average 20 times. The mentor and one teacher wrote more than 70 replies. With regard to the *April* task, the artifacts (educational scenarios) of the community ranged between 638 words and 1890 words (13,597 words in total). It seems that the participants put a lot of personal time and effort in this project because the knowledge acquired and the achievements seemed to be worth their while (Tremblay, 2004).

**Table 3**  
*Number of Interactions*



The language used by the participants can be analysed into 4 main categories and subcategories:

- social language (subcategories: social bonding, greetings and thanking)
- encouragement (subcategory: praise)

- learning language (subcategories: proposal, explanation, information, direction, lesson design, sharing) and
- negotiation

#### **4.2. Benefits to the participants**

The community provided several benefits to the participants. The teachers identified the experience as promoting individual growth and mutual learning. More specifically, the teachers' opinions were positive about the usefulness of the CoP, the topics addressed, the activities, the mentor and the interaction among members.

Notably one teacher wrote: *"Being a part of the Togather community is like being a member of a family ... you feel accepted and you get all the help you may need no matter what. One has a feeling of belonging and sharing. Throughout the year it has helped me with lots of ideas to implement in my classroom and got me in touch with colleagues I haven't known and have never worked with before. The input given has helped me with new theories of teaching and supported me with my students. To sum up, it is now a community not only of teachers but of friends who share the same interests and help and support each other".*

Another teacher stated: *"The 2gather CoP is a remarkable and praise worthy effort of substantial training. It gives us the opportunity to communicate and exchange ideas on practical issues. I can't wait every time to read my colleagues' ideas because I always take something from them and I hope I give them something too".*

Another teacher shared: *"I recommend the 2Gather community platform for the easy and immediate sharing of good teaching practices or tips for recurring problems in the classroom"!*

One more teacher remarked: *"The idea of this training/discovery learning course, through ToGather platform, seemed "intimidating" at first as I've always been pressed for time, but it ended up being thrilling and challenging! I was given the opportunity to delve into new teaching techniques and approaches and dig into bibliography, reading, reflecting, exploring, writing, which rendered the course insightful, inspiring, instructive as well as rejuvenating and... "therapeutic"!!! The "soul" and initiator of the initiative: the School Advisor in D'Athens. Educator, Mentor, Supporter, Inspirer, Friend! Always there for us! Alexia, I owe you, big time! Thank you so very much for the wonderful experience! I'd also like to thank my colleagues on the platform for their encouragement and contribution"!*

#### **4.3. The teacher and peer feedback**

The mentor used both *low moderation* feedback, in Vlachopoulos and McAleese's (2004) terms, to help teachers reflect and drive conversations towards the desired goal, and *high moderation* feedback to engage in professional dialogue (Figure 5). The specific feedback included the following moderation activities:

- communication management (deepening the dialogue, extracting the meanings of discussions)
  - knowledge management (promoting and encouraging educational interactions).
- Collegial feedback was always positive, reinforcing, focusing on particular strengths, appreciative and suggestive (Figure 6).

<p>Topics: 6 Replies: 30</p>  <p><b>Alexia</b> Member</p> <p>Topics: 20 Replies: 60</p>	<p>learners because of the reasons you mention and I really dislike the accents of the recordings. I would also like to add that my students get really excited every time a new project is assigned to them! In a few words I consider the D class coursebook well written and quite fun..</p> <p style="text-align: right;"><a href="#">EDIT</a>   <a href="#">MOVE</a>   <a href="#">SPLIT</a>   <a href="#">TRASH</a>   <a href="#">SPAM</a>   <a href="#">REPLY</a></p>
 <p><b>Alexia</b> Member</p> <p>Topics: 20 Replies: 60</p>	<p><b>February 24, 2015 at 11:30 pm</b></p> <p>Dear Niko and Liana,</p> <p>Without doubt teachers prefer books that adhere to Standard English and Standard Received Pronunciation. This is not surprising since students in the early grades are more likely to achieve native-like pronunciation because of a neural practicity. However, in the light of ELF (English as a Lingua Franca) and WE (World Englishes) it is necessary to expose children to accents and speakers that are not only Native English. The problem with the accents in the D Class textbook is that they are funny or silly, as one teacher put it.</p> <p>If you want to find out more about the EFL coursebook evaluation in Greek primary schools, <a href="#">here</a> is an interesting article by N. Sifakis &amp; D. Tsaggari (2014).</p> <p style="text-align: right;"><a href="#">EDIT</a>   <a href="#">MOVE</a>   <a href="#">SPLIT</a>   <a href="#">TRASH</a>   <a href="#">SPAM</a>   <a href="#">REPLY</a></p>

Figure 5: Instance of mentor feedback

<p>Replies: 23</p>  <p><b>NIKOS</b> Member</p> <p>Topics: 6 Replies: 31</p>	<p><b>May 31, 2015 at 10:24 am</b></p> <p>Marina, your presentation is amazing! I really like your animated rubrics as they sound vivid and explicit! Your key principles are so plain too. Your random pairing up, through the red and yellow cards, is an excellent idea for group forming. The contract process ia also clear, whereas the cartoon in the end is really amusing! So, don't be hard on yourself...</p> <p style="text-align: right;"><a href="#">EDIT</a>   <a href="#">MOVE</a>   <a href="#">SPLIT</a>   <a href="#">TRASH</a>   <a href="#">SPAM</a>   <a href="#">REPLY</a></p>
 <p><b>Marina</b> Member</p> <p>Topics: 7 Replies: 23</p>	<p><b>June 7, 2015 at 2:35 pm</b></p> <p>Thanks, but to be honest if I hadn't studied all your presentations I would have more difficulty mostly because of the lack of time!</p> <p style="text-align: right;"><a href="#">EDIT</a>   <a href="#">MOVE</a>   <a href="#">SPLIT</a>   <a href="#">TRASH</a>   <a href="#">SPAM</a>   <a href="#">REPLY</a></p>
 <p><b>Victoria</b> Member</p> <p>Topics: 6 Replies: 70</p>	<p><b>June 8, 2015 at 5:35 pm</b></p> <p>Dear Marina,</p> <p>Your way of class grouping is so easy-to-follow and efficient that it would be hard for your students not to start to enjoy the lesson from the very first day! Well, done!</p> <p style="text-align: right;"><a href="#">EDIT</a>   <a href="#">MOVE</a>   <a href="#">SPLIT</a>   <a href="#">TRASH</a>   <a href="#">SPAM</a>   <a href="#">REPLY</a></p>

Figure 6: Instance of collegial feedback

#### 4.4. The values created by the community

According to the mentor, teachers produced high quality content in their responses and products. They created shared understandings, shared values, shared perspectives and new knowledge. The community was successful because the participants' commitment and contribution was remarkable and because it functioned as a repository for collective memory. Based on Wenger, Trayner and Da Laat (2011), the values created by the community were:

- Immediate value (engaging in professional conversation with colleagues)
- Potential value (deepening their knowledge of the topic)

- Applied value (using ideas from the community in the classroom)
- Realised value (producing actual lessons)

## 5. Concluding remarks

This paper has illuminated the learning experiences in the community and drawn conclusions about issues of creating, managing and sustaining the community effectively in order to create added value for the individuals. DACoP is an epistemic and creative community (Amin & Roberts, 2008) with a high degree of communication and interaction, reflection and engagement.

A general conclusion derived is that the success of DaCoP depended on the following conditions:

- social relations between participants
- the leader/animator of the community
- the resources
- recognition, encouragement, psychological safety and trust
- self-efficacy (a positive self-perception of abilities)
- a sense of membership and commitment of participants to the community and its activities

As such, this study identifies the impact of the specific community as positive and holding significant promise for the future.

It seems that this CPD model can open a new path in teacher education. However, there is a limited evidence base, therefore, further research into this community and/or other communities will form a stronger evidence base for the development of CoPs and their effectiveness for professional learning. The research into this community will continue in order to investigate if the learning of the individuals can potentially contribute to a change in school culture and if the activities of the community will generate enough excitement and value to attract more members.

## Notes

<sup>1</sup> The school advisor is Dr. Alexia Giannakopoulou, who instructs, coordinates, moderates the community and conducts the action research.

<sup>2</sup><http://rcel.enl.uoa.gr/togather/>

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## **7.4. Investigating EFL teachers' concerns and beliefs during teaching practice and in their first year of teaching**

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### **Abstract**

*This study purports to examine pre-service and beginning English as a Foreign Language (EFL) teachers' concerns and beliefs. Analysis of both quantitative and qualitative data showed that the participants were mainly concerned about their target language competence, their ability to integrate ICT effectively in their teaching and the impact of their teaching on their students' learning. Data analysis revealed that most of their beliefs remained stable during the research period, while it can be argued that the participants' beliefs promote the communicative language teaching approach to a great degree.*

**Key-words:** Teacher education, teaching practice, teachers' concerns and beliefs, EFL teachers' target language competence

### **1. Introduction**

This paper attempts to report research on the EFL student and beginning teachers' beliefs and concerns focusing on a period spanning from their last year of studies up to their completion of their first year as EFL teachers. The main research questions posed are: a) Is there a developmental pattern or change during the research period in the EFL teachers' concerns and beliefs? b) Do the participants' teaching practices reflect their beliefs?

According to Fuller (1969), concerns are defined as "the perceived problems of teachers" (p. 214). Fuller and Bown (1974) in their description of teacher development in relation to teachers' concerns maintain that novice and beginning teachers are in a 'survival stage' where they strive to adapt to the school reality and become a teacher. The first stage is concern for self. In the 'mastery stage' teachers are no longer focused on themselves but learn to master and shape the learning-teaching context and the concern is about the teaching task. In the 'routine stage' teachers take students' individual needs and desires into account and view themselves as educators and mentors of their students' learning processes, which is the impact concern. These three types of concerns follow a hierarchical pattern; one moves up the levels by addressing and resolving perceived problems at each level. Fuller's concerns theory assumes that before a teacher can address the later concerns, the earlier concerns must be resolved (Watzke, 2002, p. 3).

In the framework set in this study, I consider beliefs as "psychologically held understandings, premises, or propositions about the world that are felt to be true" (Richardson, 1996, p. 102) which function as a "guide to personal thought and action" (Harvey, 1986, p. 660). When applied to teaching, they are construed as understandings, premises, or propositions about teaching which function as a guide to personal thought or action in instructional settings. The most important features of teachers' beliefs are that they interact with and influence teachers' instructional practices and that they are considered to be resistant to change (Almarza, 1996).

It is has been suggested that teachers enter teacher education programmes with stable belief systems and perspectives (Bullough, 1990; Calderhead & Robson, 1991;

Zahorik, 1989), and a personal teaching schema or an individualized value system about teaching and learning (Bramald, Hardman, & Leat 1995; Boz, 2008; Calderhead & Robson, 1991; Clark, 1988; Holt-Reynolds, 1992; Wubbels, 1992). This personal teaching schema includes feelings, concerns, values and beliefs. The analysis of student teachers' concerns provide data on the complex interplay between student teachers' thoughts, beliefs and emotions, and their experience during their teaching practice (Poulou, 2007).

Furthermore, research findings suggest that student teachers beliefs play a pivotal role in their acquisition and interpretation of knowledge offered in teacher education programmes (Pajares, 1992). It has also been argued that an important factor contributing to the incomplete transfer of the theories taught in the university to classroom teaching practice lies in the failure to act upon and challenge the student teachers' already formed beliefs (Poulou, 2007). Moreover, unexplored beliefs may be responsible for the perpetuation of antiquated and ineffectual teaching practices. It is, therefore, absolutely necessary to investigate student and beginning teachers' beliefs if teacher education is to be teacher centred (see Giotis, 2015).

## **2. Methodology**

Quantitative and qualitative measures were employed to gather data which provided the answers to the research questions posed. In terms of quantitative data, a questionnaire was developed (Integrated Concerns Beliefs Questionnaire – ICBQ) in order to collect data about the participants' concerns and beliefs which was administered at four times during the sixteen month research period (1. Before the teaching practice; 2. After the teaching practice; 3. After three months of teaching; 4. At the end of the first year of teaching) . A total of 212 questionnaires were collected and were statistically analyzed by the use of SPSS v.20 statistical software. In terms of qualitative data, diaries, observation forms and interviews were employed and delivered a huge amount of data (404.389 words) which were submitted to analysis by the use of NVivo software. The following figure illustrates the complete research design.

## **3. The main research findings**

To begin with, the research data from all the sources substantiate the fact that the participants have concerns which are of three distinct types: self concerns, task concerns and impact concerns, each of which develops in its own separate way. Self concerns decreased considerably during the research period, in many cases in a statistically significant fashion. The highest degree of self concern at the beginning of the research period is identified in the concern about being accepted and respected by the students, which is further interpreted, on the basis of the qualitative data, as a need to be liked by the students and at the same time regarded as a "real" teacher. The participants are also concerned about their ability to put their knowledge of ELT methodology as well as their classroom discipline policy effectively into practice during this period.

This overall self concern mean decrease can be attributed to the fact that the participants felt more confident about their competence in the specific aspects of teaching (classroom discipline, ELT methodology) and their image about themselves as "real" teachers due to their added teaching experience. In relation to classroom discipline the participants did not encounter any serious discipline problems or they coped with difficulties as time passed. What is more, their concern about ELT methodology related more to putting theory or their knowledge about ELT methodology into practice. Actually, the specific concern was about the participants being given the chance to expand or update their knowledge about ELT methodology.

Task concerns after increasing at the beginning of the research period they decreased to almost the same level to the one reported at the beginning of the research period. Participants' task concerns, according to both quantitative and qualitative data, involved mainly lesson design, time management and ICT use. Regarding lesson design, the participants concern related to their lack of confidence in their ability to design an effective lesson and to their anxiety about the outcome of their effort, when they would teach the lesson they planned. In relation to time management, the participants' responses mentioned cases in which they did not manage their teaching time effectively and, therefore, were not able to cover the planned material. In addition, it is related to the participants' uncertainty at the lesson design stage about the amount of time to be allocated to the tasks developed.

Finally, concerns about ICT use were mainly about the fact that some of the participants lacked the necessary skills and knowledge in order to integrate it efficiently in their teaching. Impact concerns are the highest concern type reported by the participants with minor variations at the four points of the ICBQ administration. Data gathered from the ICBQ, the diaries and the interviews reveal a consistently high degree of concern about motivating students, helping students with learning problems, meeting the needs of different kinds of students and helping students become autonomous learners.

On the basis of the research findings, it can be asserted that the stage concern theory is not supported. Although self concerns decrease during the research period, impact concerns were the highest, in terms of overall mean and individual variables. From this point of view, the findings reported in this thesis are in line with research by Cohen (1982), Pigge and Marso, (1987), Reeves and Kazelskis (1988), Smith and Sanche (1992), Turley (2002) and Watzke (2002, 2007), which debunk the theory of self-task-impact staged development of concerns. In terms of individual variables the research findings reported in this study are in line with research conducted by Watzke (2007) and Poulou (2007), who mention high means for classroom discipline, which decrease with teaching experience.

Regarding belief development, it should be mentioned that, on the level of the overall mean, the participants' beliefs do not change considerably. On the individual variable level, however, beliefs about specific aspects of teaching seem to change. More specifically, the participants seem to promote communicative related beliefs to a greater degree when it comes to teaching grammar and error correction, but at the same time they diverge from the communicative principles in the case of group/pair work activities.

To further elaborate the previous point, in relation to teaching grammar, data from the observation forms, the diaries, the ICBQ and the interviews reveal consistency between the participants' beliefs and their teaching practices. To be more specific, 50% of the participants reported that they employ traditional teaching practices when teaching grammar and the rest 50% follow the inductive approach to teaching grammar. Similar percentages were reported by the other data sources (ICBQ, observation forms and diaries) in terms of agreement with the corresponding beliefs.

The issue of pair/group work activities is, probably, the aspect of teaching which displays the most complicated development. In the first two ICBQ administrations, the relevant items featured a very high degree of agreement with the belief that pair/group work activities are essential in the communicative classroom. These findings were validated by the data from the diaries. At the end of the research period, however, participants featured a statistically significant decrease in their level of espousing the relevant beliefs about pair and group work in the relevant items in the ICBQ.

At the same time, all the participants consistently express the belief, when interviewed, that pair/group work activities are important for various reasons. However, when they report their teaching practices, they consistently point out that they make limited or no use of pair/group work activities, mainly due to discipline problems, students' preferences and school policy. In addition, they employ pair/group work activities only in cases when the course book includes activities of this type.

In the case of pair/group work, therefore, it is not so much a matter of inconsistency or discrepancy between the reported beliefs and teaching practices. It is rather a matter of tensions between belief and reality as Phipps and Borg (2009) rightly explain. According to their work these tensions might be expressed by the theoretical schema: "I believe in X but my students expect me to do Y". In the case of pair/group work activities, this schema can be used to form the following interpretive sentences: "I believe in pair/group work activities importance but I face discipline problems when I employ them"; "I believe in pair/group work activities importance but the school owner expects me not to employ them in class"; "I believe in pair/group work activities importance but my students expect exam-focused material only".

To conclude the discussion about teaching practices, it can be argued that there is a mixed pattern in the relationship of the participants' beliefs with their reported teaching practices which is dependent on which aspect of teaching is concerned each time. To this end, no generalisations can be made as to whether there is consistency or inconsistency as both are detected when the data are analysed. More specifically, in terms of error correction, teaching grammar and L1 use, there is consistency between the participants' beliefs and their teaching practices. On the other hand, regarding pair/group work there is an incompatibility between the participants' beliefs and their teaching practices. This incompatibility is attributed to a number of tensions between beliefs about pair/group work and the teaching reality.

#### **4. Implications**

When I introduced the term teacher-centred teacher education (Giotis, 2015) I conceived it as an approach which focuses on the student/beginning teachers' mental lives, their concerns and beliefs. Teacher centredness in teacher education may be reflected by recognising teachers' prior knowledge about teaching and their specific concerns and beliefs about teaching, especially during their teaching practice and first year of teaching. The first step towards teacher centred teacher education is to conduct research in order to gather data about student/beginning teachers' concerns, beliefs and teaching practices.

Concerns and beliefs constitute important elements of a teacher's, student-beginning-experienced identity. The process of learning to teach is not only very complex but also very personal (Pillen, Den Brok, & Beijaard, 2013). Teacher identity is developed through the integration of one's personal knowledge, beliefs and concerns about teaching on the one hand and a great number of expectations from students, parents, colleagues, teacher education institutes and employers on the other (Beijaard, Meijer, & Verloop, 2004). In this context, it is of utmost importance that teacher educators are aware of their student teachers' beliefs and concerns and use them as a design template for the teacher education programmes they offer.

Another important implication is that concerns and beliefs should be investigated in a context specific manner. As Larsen-Freeman and Anderson (2011) rightly argue that for pedagogic practices we do not need a one size fits all solution, but rather a 'shift to localization'; this should also be the case for researching teachers' concerns and beliefs. No matter how useful, handy or statistically valid is a research tool, it is not

appropriate for all educational and teaching contexts. It is recommended that researchers apply first qualitative tools, so that they acquire an in-depth understanding of the teachers' concerns and beliefs and subsequently employ quantitative measures to investigate these issues taking into account, of course, research tools developed by others. I followed this method by developing most of the ICBQ items based on the participants' entries in their diaries during their teaching practice and on the relevant research tools applied by other researchers. We need, therefore, a shift to localization, when it comes to data gathering instruments if we want to examine concerns and beliefs and, subsequently, use the data for the improvement or redesign of teacher education programmes.

Learning to teach is a complex process but also very personal (Olsen, 2010). Teachers bring into the profession their own beliefs and concerns about teaching. Teacher educators and teacher education providers need to focus on these issues if teacher centred teacher education is to be sought.

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## **7.5 Developing intercultural competences (attitudes, values, knowledge, skills) in the Greek school students with the teaching of Language and Literature courses. A comparative approach of the Curricula 2003 and 2011**

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### **Abstract**

*In greek schools special emphasis is given to intercultural education, the elements of which are stated in the aims, goals and contents of the –in use- Curricula of 2003 and the new Curricula of 2011. Our aim was to notice and compare the extent to which these Curricula take into consideration Byram's model for the elements necessary for the development of intercultural competences in the pupils. Our research focused on the courses of Greek Language and Literature at Primary and Secondary Education, specifically, on the aims, thematic units, proposed teaching methods and activities, as well as the interdisciplinary projects and teaching scenarios. Our findings (words, sentences, paragraphs) were firstly analyzed and then categorized according to Byram's model categories: 1. Attitudes 2. Knowledge 3. Skills I, Skills II and 4. Cultural awareness.*

**Key-words:** Multicultural society, cultural skills, co-existence, intercultural awareness

### **1. Introduction**

School classes today are multicultural and require the pupils to develop new cultural communication skills and competences. Thus, intercultural education is considered to be of major importance (Anagnostopoulou & Maniati, 2006). Therefore, the Greek state emphasized the need to promote peaceful coexistence and equal opportunities to all pupils independently of their cultural origin (Ziogou & Mpesi, 2010). We investigated whether the intercultural competences promoted in Curricula 2003 (Government Gazette, 2003) and Pilot Curricula 2011 (Ministry of Education, 2011) in Language and Literature courses took into consideration Byram's model for the elements necessary for the development of intercultural competences in the pupils.

### **2. Theoretical background**

Byram's (1997) model for the elements necessary for the development of intercultural competences in the pupils<sup>1</sup> suggests the following categories:

**Attitudes (Intercultural):** awareness and assumption that people living in diverse cultural contexts develop different competences: (a) *Curiosity and openness (not prejudice towards other cultures and attitude of superiority about one's own)*. (b) *Willingness to consider and assume that one's own values, beliefs may not be the only correct ones* (c) *Ability to view one's own cultural values from another side.*

**Knowledge:** communication and interaction abilities, provided they have equal value. This requires: (a) Knowledge about cultures of people living in one's own country (b) Interaction processes both at social and individual level.

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<sup>1</sup> His model can be used as a starting point in the foreign language classroom.

**Skills:** Skills I: competence to notice and interpret in a foreign literature text elements from other cultures, and relate it to literature texts of one's own culture (only for Literature course).

Skills II: competences in coexistence, acceptance, cooperation, inclusion to promote interaction with the 'others', coming from different cultural background.

**Critical Cultural Awareness** (self-engage): developing competences of understanding, interaction and equality in multicultural societies, evaluating practices in one's own and other cultures.

The above are complemented by the values (respect, tolerance, equality, solidarity) acquired by somebody belonging to social group(s) and consist part of his/her social identity (Byram, 1997).

### **3. Aim of the research**

We aimed to examine whether and to what extend Curricula 2003 and 2011 help pupils develop intercultural competences as suggested in Byram's model.

### **4. Content of the research**

Our research focused on Language and Literature courses in Primary and Secondary Education, in both Curricula 2003 and 2011 and included aims, abilities/skills and suggested activities as Literature conveys the various cultures elements. (Mitropoulou et al., 2014, pp. 384-397)

Our research included:

Curricula 2003 – Primary School: Language and Literature (**one course**)

Curricula 2003 – High School: Literature, Language

Curricula 2011 – Primary School: Literature, Language

Curricula 2011 – High School: Literature, Language

### **5. Methodology**

The research process followed the qualitative content analysis of the aims and suggested activities in both Curricula. First, we analyzed the aims (general, per unit, per thematic unit) in both Curricula in Language and Literature and then the suggested skills and activities. We categorized the recorded competences into the four categories below, following Byram's model. Finally, we compared our findings and presented our remarks and conclusions (Cohen & Manion, 1997).

### **6. Findings**

#### **6.1 General aims of the curricula**

##### **6.1.1 Language**

###### **6.1.1.1 Primary school:**

In Curricula 2003 (Language and Literature are one course) the pupils should develop competences to help them "understand the position of the language in the civilizations of all peoples, its importance, to come in contact with cultural linguistic elements from other countries, to appreciate and respect the language of the "other".

In Curricula 2011 emphasis is placed in the school system to "develop mechanisms for better induction of foreign or non greek-speaking pupils", to "encourage interaction and communication". The pupils should "acquire the traits of a critical thinking citizen who fights for equivalence, respect of rights, peace, understanding and solidarity" and "recognizes the history of the various cultural traditions".

### **6.1.1.2 High school**

There were no findings referring to intercultural competences in both Curricula 2003 and 2011 in Language; the content is strictly limited to Greek language and grammar.

### **6.1.1.3 Remarks**

The competences recorded in curricula 2003 are simpler and refer to understanding, appreciate and respect the language of the ‘other’. In 2011 they are more elevated, as they refer to fights for equivalence, respect of rights, peace, solidarity, interaction, understanding and communication.

## **6.1.2 Literature**

### **6.1.2.1 Primary School**

In curricula 2003 (Literature and Language one course) is stated that “*Literature is an intercultural place*” and “*...in a multicultural society where all the different cultural identities and traditions co-exist and interact*” can promote “*...the cultivation of ethos and values*”.

In the general aims of Curricula 2011 it is stated that the students in every “*school class should become a community of readers, that will be ruled by the values of democracy, equality, respect of diversity, pluralism, dialogue, ...intercultural consciousness*”.

### **6.1.2.2 High school**

In the general aims of Curricula 2003 it is stated that “*the contribution of literature in the equivalence of peoples and cultures..., the enhancement of the educational efficiency, the ability of communication and the development of sensitivity in the students through the reading, understanding and interpretation of the classic literature works of both Greek and foreign writers*”.

In the general aims of Curricula 2011 it is pointed out the value of literature as “*educational good within the frame of humanistic education as well as its contribution to the equivalence of peoples and cultures... As first value of the course is the development of critical attitude towards cultural traditions, values and messages wherever they come from*”.

### **6.1.2.3 Remarks**

The pupils’ competences promoted in curricula 2003 regard the development of the ability of communication, sensitivity/empathy, understanding, interpretation through the reading of literature texts. The competences in curricula 2011 stress critical attitude towards various cultures (traditions, values, messages).

## **6.2 Intercultural competences in Language and Literature courses**

Then following Byram’s model we proceeded with the investigation of the intercultural competences in the rest of aims, activities in Literature in curricula 2003 and 2011: (a) Attitudes, (b) Knowledge (c) Skills (Skills I and Skills II), (d) Cultural Awareness.

In Language course there were no findings.

Our findings per category are the following:

### **6.2.1 1st category: Attitudes in connection with the others**

We recorded the following terms concerning the attitude to the ‘other’: (a) another way of life, (b) foreigner, (c) foreign lands, (d) otherness, (e) stereotypes, (f) civilization/culture, (g) religion, (h) universal identity.

Table 1  
*Attitude to the ‘Other’*

Competences	Attitude competences			
	Curricula 2003		Curricula 2011	
	Primary School	High School	Primary School	High School
Another way of life			Thematic unit: “History of other peoples: “the pupils to approach <b>other ways of life...</b> ”. “the pupils to search for fairy tales, legends, songs, traditions, narrations of other peoples. There will be dramatization of everyday life scenes and rituals of other peoples and <u>comparison among habits and customs</u> of different peoples.”	
Foreigner	Thematic unit “The emigration”: The emigration is that the pupils must realize that the greek literature offers a variety of viewpoints towards the “foreigner” and tries to record the meaning of the action of a Greek accepting a “foreigner” in his country”		Thematic unit “The <b>foreigner</b> ”, to realize the existence of the “foreigner” in every society and in every time”.... “to relate the “foreigner” with the historical conditions that create him, to understand that the “stranger” is not an intrinsic property but acquired, and that anyone may eventually become “stranger”, .... “to connect the meaning of the term ‘foreigner’ with terms like xenophobia, racism, marginalization”.	In the thematic unit “Portraits of adolescents”: “must give emphasis to the peculiarities of the social inclusion of the “foreigner” adolescents...”.
Foreign lands	Thematic unit “The emigration”: to		Thematic unit “The foreigner” includes “Poems	

	<p>“understand that experiences such as those of emigration, immigration, exile, the foreign lands, are associated with specific historical and social conditions”.</p>	<p>and folk songs for <b>foreign lands</b>. Poems and folk songs for <b>foreign lands</b></p>
Otherness		<p>Aims of thematic unit “<b>Otherness</b> in literature”: “the competence of the pupils to “understand the various forms of the term ‘otherness’: national, cultural, religious, disability... ”.</p>
Stereotypes		<p>Aims of thematic unit “<b>the travelling</b>”: to become conscious that the travelling brings us in contact with the foreigner, help us to remove prejudices and stereotypes..”</p>
Civilization/culture	<p>Aims of thematic unit “<i>Getting to know the place</i>” to understand that the journey gives the possibility to know other places and other cultures”</p>	<p>Thematic unit “<i>History of other peoples</i>” to “recognize and interpret elements of <b>other cultures</b>”.</p>
Religion	<p>Aims of thematic unit “<i>Religious Life</i>” to understand the variety of ways with which is expressed the <b>religious experience</b> in literature... to</p>	

Universal identity	<i>understand the role of religion in the history of the peoples”</i> Aims of thematic unit “ <i>Foreign literature</i> ” to “ <i>understand the character of the greek, european, and universal cultural identity</i> ”.
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### 6.2.1.1 Remarks

Most of the competence elements in the category “*Attitudes*” are found in Literature course in curricula 2011 for Primary School and in Literature in Curricula 2003 for High School. No competences of this category were recorded in Primary School Curricula 2003.

The competence terms frequently found are “*foreigner*” in curricula 2011 for Primary school and “*otherness*” in curricula 2011 for High School. The other competences were recorded either in curricula 2003 (for High School) or 2011 (for both Primary and High School).

### 6.2.2 2nd category: Knowledge

We recorded: (a) *collaboration*, (b) *communication*, (c) *coexistence*, (d) *athletic ideals*, (e) *cultural exchange*.

Table 2  
*Knowledge Competences*

Competences	Knowledge competences			
	Curricula 2003		Curricula 2011	
	Primary School	High School	Primary School	High School
Collaboration	Aims of thematic unit “ <i>Friendly relations</i> ”: “ <i>friendships with children from other countries</i> ”.			
Communication	Aims of thematic unit “ <i>Friendly relations</i> ”: “ <i>friendships with children from other countries</i> ”.			
Coexistence	Aims of thematic unit “ <i>Friendly relations</i> ”: “ <i>friendships with children from other countries</i> ”.			
Athletic ideals		In the general aims: “ <i>the emergence of the athletic ideals as part of strengthening</i> ”		

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Cultural exchange	<p><i>relations between peoples".</i></p> <p>in the Suggested Activities for the term "<b>foreigner</b>" to notice: "<i>the emergence of the athletic ideals as part of strengthening relations between peoples</i>".</p> <p>"Search the term "<b>foreigner</b>" in a dictionary, read non-literary texts on the "foreigner" (newspapers, history, scientific articles), producing various kind of texts on the "foreigner" in a newspaper, journal recording, narrative), listen and read folk songs about the "foreigner", plan a radio broadcast with songs and short texts on the "foreigner", exhibition of material they collected on the foreigners".</p>
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### **6.2.2.1 Remarks**

We recorded one finding in Primary School and one in High School in Curricula 2003. The competences of this category are mostly found in Literature for Primary school of curricula 2011. There were no competences in Curricula 2011 for High School. This is perhaps because the primary school pupils are not considered mature enough to approach the "other", the "foreigner" and interact with him/her, but they are considered able enough to get information (knowledge) about the "other".

### **6.3.1 3<sup>rd</sup> Category: Skills (Skills I, Skills II)**

#### **6.3.1.1 Skills I**

The competences recorded, only in Literature course, were: (a) foreign literature, (b) art (architecture), (c) otherness.

Table 3  
*Skills*

Skills I competences				
Competences	Curricula 2003		Curricula 2011	
	Primary School	High School	Primary School	High School
Foreign literature		<p>Thematic unit “<i>Foreign literature</i>”: to recognize the multiplicity of the literature expressions and become conscious of the creative communication among the literatures of the different countries”.</p> <p>In the suggested activities: “searching of literature texts from the countries of the <b>foreign</b> pupils, which will provide the possibility of discussing issues of the political and social life within the frame of an intercultural approach of the literature”.</p>	<p><i>the pupils to notice famous foreigners in the Greek mythology the and history... ”</i></p> <p><i>“constructions” for the foreigner in the various texts.</i></p>	
Art (architecture)		<p>In the suggested activities in thematic unit: “<i>Getting to know the country</i>” are: “searching for photos of traditional <b>architecture</b> from Greece and other Balkan countries, by noticing common elements on the buildings and, thus, revealing the <b>architectural profile</b> of the country”.</p>		
Otherness		<p>In the suggested activities to: <i>research in the newspapers,</i></p>	<p>Thematic unit “<b>Otherness in literature</b>” to: “understand the</p>	

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<p><i>journals, school books and other books, in order to select material on otherness”.</i></p>	<p><i>meaning the various forms of otherness: national, cultural, religious, disability”.</i></p>
	<p><i>“to notice in a literature text the “different” hero and interpret his/her behavior as well as the other heroes’ towards him/her..., to notice the elements that differentiate the people (social position, religion, customs).</i></p>

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#### **6.3.1.1 Remarks**

No competences were recorded in Curricula 2003 for Primary School. In Curricula 2011 for High School in the various texts referring to the “foreigner” it is stated that the pupils should be competent to recognize the stereotypes for the foreigner. In Curricula 2011 for High School, ‘otherness’ constitutes an important competence in the aims and pupils’ skills. Most of the competences were recorded in Curricula 2003 for High School.

#### **6.3.1.2 Skills II:**

We recorded the following competences: in Language: (a) inclusion, (b) co-existence and in Literature: (c) performance, (d) interaction, (e) interculturalism, (f) acceptance.

##### **6.3.1.2.1 Language (Inclusion)**

(a) inclusion: in the Primary School Curricula 2003 an aim is to co-exist harmoniously with the ‘others’ (the non-Greek speaking).

(b) co-existence: in Curricula 2011 for Primary School one of the aims is that foreign pupils will develop competences and improve their achievements, when they feel that in the school environment do not exist barriers that create exclusions or inequalities.

##### **6.3.1.2.2 Literature**

Competences in Literature were: (a) interaction, (b) coexistence, (c) interculturalism, (d) acceptance.

Table 4

*Competences in Literature*

Competences	Skills II competences			
	Curricula 2003		Curricula 2011	
	Primary School	High School	Primary School	High School
interaction		Overall has major importance		
Coexistence			An aim in thematic unit “ <i>Otherness in literature</i> ”: “to understand that we can <b>coexist</b> despite our otherness; we are all equal but not the same”	
Interculturalism		Thematic unit “ <i>Getting to know the place</i> ”: “to become sensitive on the <b>intercultural dimension</b> ”		
Acceptance		Thematic unit “ <i>Otherness in literature</i> ”: to “understand and <b>accept</b> the similarities and differences among religions, peoples, mentalities, and [accept]the existence of some groups with difficulties”.		

**6.3.1.2.1 Remarks**

Competences were found in the Primary School in Language of both curricula but not explicitly stated. What is important is to internalize them. In Literature there were not any competences recorded in Primary School but only in High School in both Curricula 2003 and 2011. In Curricula 2003 for High School the competence of **interaction** has major importance and is related to the terms **interaction**, **interculturalism**, **acceptance** while in curricula 2011 is related to the term **coexistence**.

**6.4.1 4th category: Cultural awareness**

Were recorded the competences: (a) equivalence of cultures, (b) multicultural society, (c) empathy, (d) foreigner but only in the Literature course.

Table 5  
*Cultural Awareness*

<b>Cultural Awareness competences</b>				
<b>Competences</b>	<b>Curricula 2003</b>		<b>Curricula 2011</b>	
	Primary School	High School	Primary School	High School
Equivalence of cultures		Gain “consciousness on the <b>equivalence</b> of the achievements of world <b>cultures</b> , the cultivation of the consciousness that we live in a pluralistic world”		
Multicultural society		to “develop positive view and attitude towards the <b>multicultural society</b> , to become sensitive towards the immigration issues, to develop a positive attitude towards the ‘other’, the refugee, the immigrant”.		
Empathy			to “become sensitive towards otherness, to accept it as historic, social and natural necessity... to develop <b>empathy</b> for the foreigner”	
Foreigner		to “cultivate the tolerance and understanding for the <b>foreigner</b> and otherness.” “recognize the perspective from which the author talks about the foreigner”.		

#### 6.4.2 Remarks

No competence findings were recorded in Language and Literature (in Curricula 2003 for Primary School). Each curriculum promotes different competences on cultural awareness at each school level: “*Equivalence of cultures*” and “*multicultural society*” are mentioned in Curricula 2003 for High School while “*empathy*” and “*foreigner*” are in Curricula 2011 for High School. The curricula place emphasis on different pupils’ intercultural competences. The term “*Foreigner*” was recorded once in Curricula 2011

in Primary School. Maybe the pupils are considered immature to comprehend the cultural awareness and develop the relevant competences.

## 7. Concluding remarks

We noticed many references to the intercultural competences suggested in Byram's model. However, the competences in Language present a shift from simple understanding and respect to more complicated terms in Curricula 2011, such as: fights for equivalence, peace, solidarity and in Literature from ability of communication (in curricula 2003) to critical attitude (in curricula 2011).

Most intercultural competences were noticed in High School in both Curricula of 2003 and 2011 and not in Primary School. These were: (a) development of positive attitude towards multicultural society, the 'other' (b) consciousness of the equivalence of cultures and living in a multicultural world, (c) cultivation of pluralistic conscience, tolerance, empathy for the 'other' (d) sensitivity on immigration and otherness (e) acceptance of otherness.

A striking finding was that in curricula 2003 and 2011 are promoted different competences. We consider that further investigation is required in relation to the change in the composition of Greek society and pupils' population at the time in-between the writing of the two curricula, which is hoped to provide a reasonable explanation.

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## ***8. Teacher Education Policies***

## **8.1. Implementing a teacher education program on fostering students' self-regulated learning**

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### **Abstract**

*Research suggests that there is a need to better support teachers to bring self-regulated learning (SRL) in the classroom. This study aimed at training elementary school teachers in implementing an instructional program to foster students' SRL skills with a focus on reading comprehension. The project lasted two school years. Three teachers and their students (N=53) participated in the study. In order to evaluate the program's implementation, both quantitative and qualitative data were collected. Overall, although teachers effectively taught text comprehension skills to their students, they needed further support to foster students' metacognitive skills and to promote autonomous, less teacher-regulated learning.*

**Key-words:** Self-regulated learning, teacher training, metacognitive skills, reading comprehension, elementary school

### **1. Introduction**

#### **1.1. Theoretical background**

The theoretical models of Self-Regulated Learning (SRL) emphasize the learner agentic role. Learning is approached as an active, constructive process during which the learner sets clear and specific goals, plans her activity, uses a variety of task strategies to accomplish these goals, organizes, self-monitors, and evaluates her progress at various points of the learning process (e.g., Boekaerts & Corno, 2005; Efklides, 2011; Zimmerman & Schunk, 2001).

Mastering and applying multiple strategies to effectively monitor and regulate learning and problem solving are essential components of SRL and are critical for successful performance (Alexander, Graham, & Harris, 1998; Pressley & Hilden, 2006; Weinstein, Husman, & Dierking, 2000). However, instructional support in SRL skills is warranted to promote more effective studying and learning among students (Spruce & Bol, 2015). Active strategic learning can be taught in schools (Mason, 2013; Pressley & Gaskins, 2006). Therefore, teachers should be able to foster SRL skills both explicitly, i.e., with direct teaching, and implicitly (Spruce & Bol, 2015).

Previous studies show that teachers' training in SRL can improve students' SRL skills (Perels, Merget-Kullmann, Wende, Schmitz, & Buchbinder, 2009) or/and students' performance (Dignath & Buettner, 2008). However, research has also shown that teachers spend little time on strategy instruction in their classrooms (e.g., Hamman, Berthelot, Saia, & Crowley, 2000). There is a need for teachers to be further educated and professionally strengthened in order to effectively bring SRL in the classroom. Further documentation on education practices is warranted in order to better support teachers to endorse SRL principles and techniques during their instruction.

#### **1.2. Aim, rationale, and hypotheses of the present study**

The aim of the present study was to train elementary school teachers in a SRL skills instructional program and support them with appropriate instructional material and practices in order to effectively implement the program in their classes. The focus of the instructional program was on reading comprehension (RC), as students are expected to gain knowledge from the expository text that dominates school books and materials. Regarding reading, self-regulated readers are those who can master and use appropriately multiple skills and strategies to build understanding (Gourgey, 2002). Past research has shown that good readers' strategic action as an aspect of self-regulated reading is present before, during, and after reading (Dermitzaki, Andreou, & Paraskeva, 2008; Mason, 2013).

The whole training program for teachers lasted two school years. During the first year, the participant teachers were introduced into the rationale of SRL approach with a focus on RC. Then, the instructional program was implemented in their classes by the researchers and the teachers were further educated through observation and modeling of the implementation procedure. During the second school year, the teachers were asked to implement themselves the instructional program.

It was expected that, after training, the teachers should be able to effectively instruct the defined SRL skills to their students, attain the units' defined goals, exploit the suggested discussion points, use the suggested material efficiently and so on. Moreover, it was expected that teachers should positively comment on their experience of implementing the program.

## **2. Method**

### **2.1. Participants**

Three female teachers (Mean age = 43 y.o.) of 5<sup>th</sup> and 6<sup>th</sup> grades with a mean teaching experience of 17 years and their students (N=53) participated in the study. The participant classes came from two public schools of a medium sized town.

### **2.2. The instructional program for students**

The training program for students was developed according to Zimmerman's (2013) cyclical model of SRL. From a social cognitive perspective, self-regulatory processes and associated beliefs interact in three cyclical phases (Zimmerman, 2013). The forethought phase precedes students' engagement in a task and includes orientation to and task analysis (e.g., goal setting). During the performance phase students perform the task, observe their own performance and use self-control strategies to facilitate the attainment of their goals. The self-reflection phase involves self-assessment and reaction towards the learning outcome. Accordingly, the students' training program tapped skills before, during, and after reading and lasted 12 school hours. The students were trained in applying text comprehension cognitive strategies, such as self-questioning, concept mapping, and summarization. They were also trained in metacognitive skills, such as text orientation, self-monitoring and self-evaluation techniques.

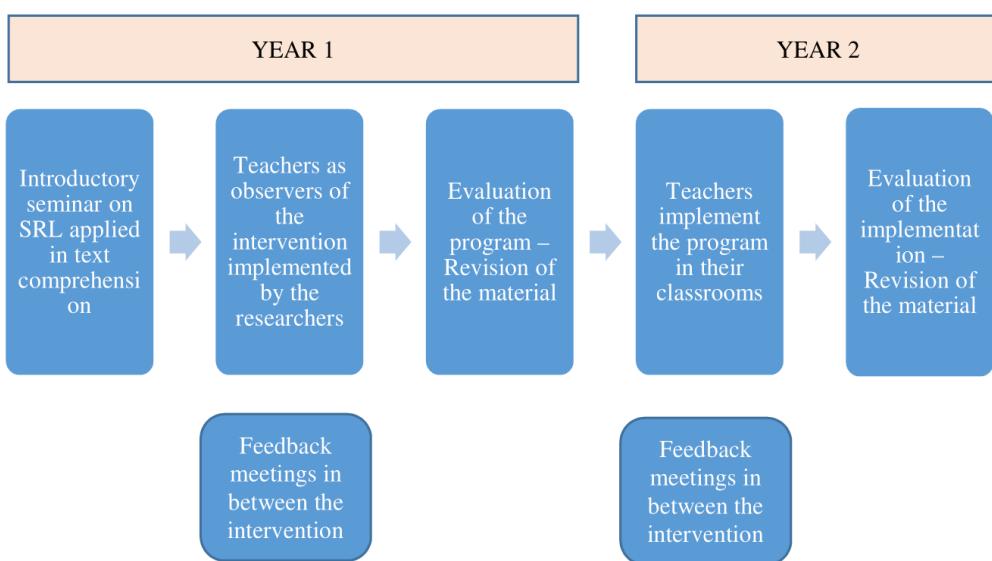
The training methods were group discussion, experience sharing, individual training, training in pairs, group work, self-record forms, etc. Direct explanation and modelling of each strategy was provided first, followed by guided student practice and, then, by independent student practice.

### **2.3. Teachers' training procedure**

During the first school year (2013-14), the participant teachers were introduced into the theory and research evidence stemming from the SRL approach. More specifically, the teachers attended an introductory workshop on principles and practices of socio-cognitive approach of SRL with a focus on reading comprehension. The teachers were given informative and educational material and discussed with the researchers the evidence that supports the utility of adopting a SRL approach and related skills and practices for learning and instruction. The rationale and structure of the students' training program were also explained to the teachers with examples of activities focusing on narrative texts. The teachers and researchers discussed and agreed on the final structure and difficulty level of the educational material for students.

After completing the seminar, the SRL skills instruction program was implemented in the classroom by the researchers. The teachers were observers of the program implementation, were encouraged to keep notes on the program's structure, practices, methods, etc., and had to collect the homework material given to students. Meetings between researchers and teachers were scheduled between the implementation phase where reflective discussions were steered regarding aspects of the project application. After the intervention, a closing meeting took place with a focus on the final elaboration of methods and materials.

During the second school year (2014-15), the teachers were asked to implement themselves the instructional program with their new classes. Meetings with the researchers between the program implementation provided feedback to the teachers and steered a reflective discussion on the course of the project application. After the teacher implementation phase, a final closing meeting between teachers and researchers took place. The intervention program was evaluated as a whole with reference to its structure, methods, and material. After this meeting, further updates and improvements of the instruction program with a focus on better adaptation to the classroom conditions were proceeded. Figure 1 depicts the main phases of the teachers' education, training, and implementation procedure.



*Figure 1. Teachers' education, training, and implementation procedure*

## **2.4. Instruments/Measures**

**2.4.1. Structured observation form.** An observation form for independent observers was developed for the purposes of the present study. The form assessed eight dimensions of each unit's implementation, such as: the extent to which the teachers adhered to unit's defined goals, exploited the suggested discussion points, used the suggested material, made the unit's goals clear to the students, made the unit's skills clear to the students, and attained the unit's goals. The structured form was filled in by the researchers for every teacher and every instructional unit that was implemented. A rating scale from 1: "not at all" to 5: "to a large extent" was used. Free notes and qualitative comments regarding aspects of the teachers' program implementation were also collected.

**2.4.2. Teachers' evaluations.** An evaluation form of the program for teachers was also developed for the purposes of the present study. The evaluation form included questions tied to each instructional unit separately, such as: "In your opinion, how difficult was for you this unit's instruction? (taking into account concepts, material etc)", "..., to what extend this unit's material was helpful for you in order to teach the unit?", "..., to what extent are this unit's defined goals clear or explicit enough to you?". The form was filled in by the teachers using a 5-point scale from 1: "not at all" to 5: "to a large extent".

## **3. Results**

### **3.1. Ratings from the structured observation form**

In Figure 2, the mean observation ratings regarding teachers' implementation of the total of the program's units are presented. Overall, the results showed that the participant teachers followed the units' defined goals and exploited the recommended discussion key points and the suggested material. Moreover, the teachers made the goals of the units and skills clear to the students to a satisfactory degree. Finally, they adequately attained the goals of the units, as their ratings stand above the mean of the rating scale. Individual differences between teachers appear also in Figure 2.

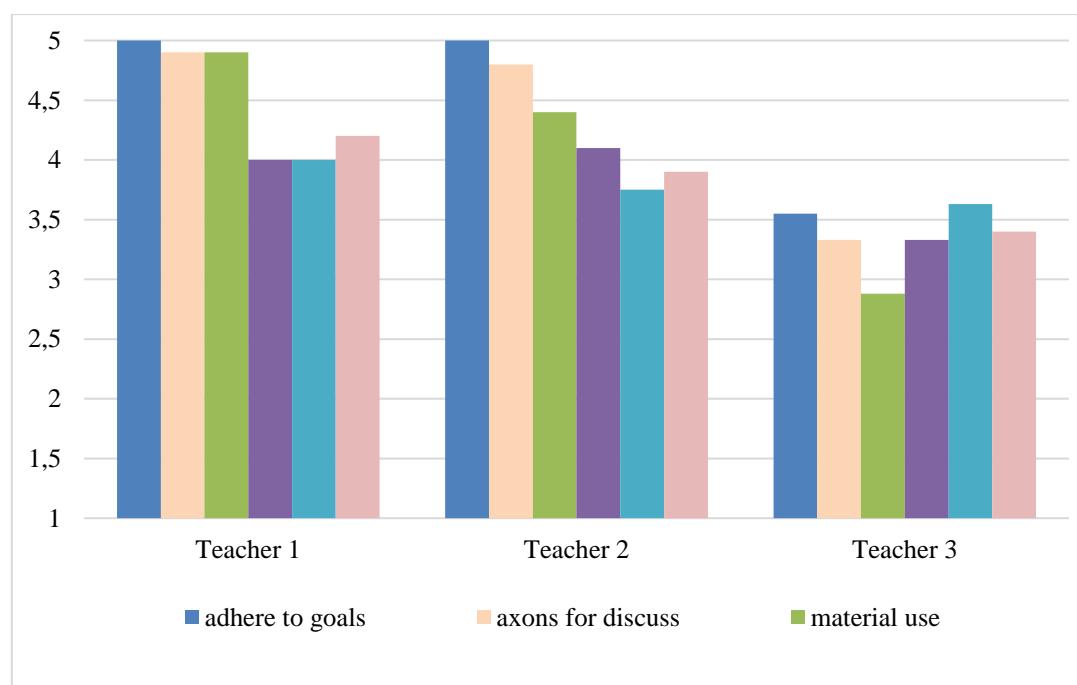


Figure 2. Observation ratings of teachers' implementation

### **3.2. Remarks from free observation of teachers' instruction**

Free notes and qualitative comments regarding aspects of the teachers' program implementation were also collected. The notes were gathered by the researchers and were allocated into thematic categories. Observation notes showed that teachers managed to largely involve and highly motivate their students to actively participate into the training program. Moreover, teachers appeared competent in teaching cognitive skills to their students in order to support RC. They were repeatedly checking their students' remembering of strategies instructed in previous units and students appeared to endorse the basic structure (three phases of SRL) and major concepts of the instructional program.

However, the teachers appeared to need further support to foster students' metacognitive skills and promote autonomous, less teacher-regulated learning. For example, it was noticed that they spent much time on elaborating the text -either the teacher herself or along with the students- rather than focus on developing and exercising students' skills for learning how to learn. Their focus was more on providing knowledge to the students, even knowledge of strategies, and less on instructing students how to regulate and control themselves during the learning process. Furthermore, the time allowed for reflection on learning outcomes was minimal.

### **3.3. Teachers' evaluative reports regarding the program implementation**

In Figure 3, teachers' evaluative reports regarding the program implementation are presented. Figure 3 captures the means of the teachers' ratings regarding the total of the program's units. Overall, the teachers rated the units' instruction as rather easy, the material helpful and the units' defined goals and skills to be instructed as quite clear to the instructor.

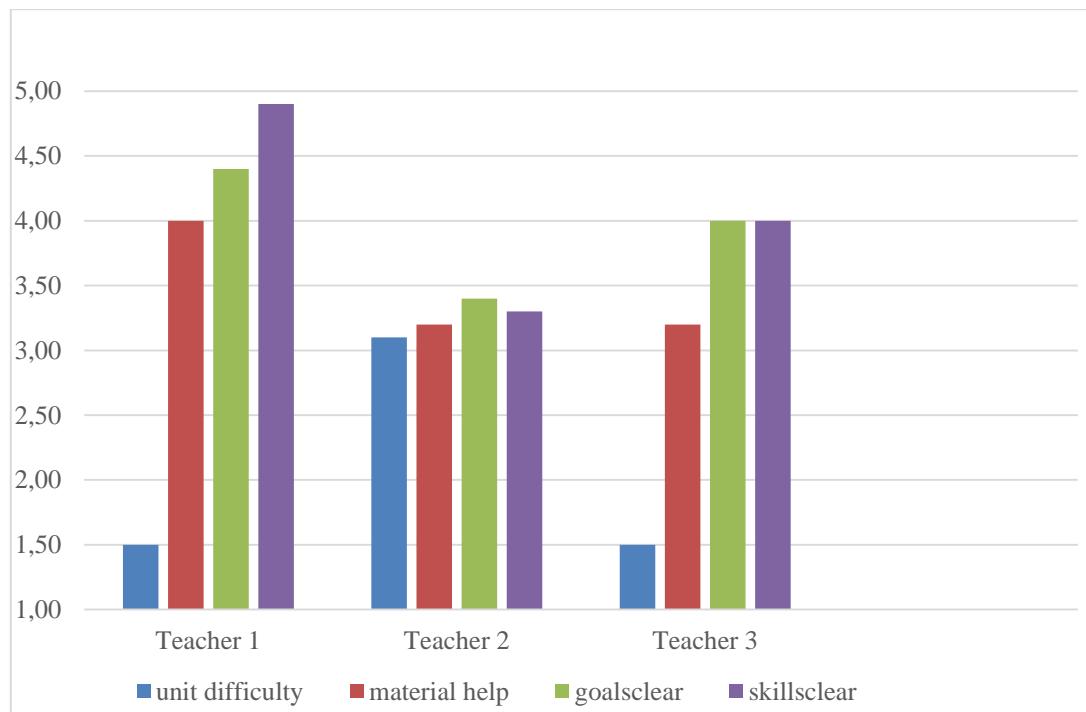


Figure 3. Teachers' evaluative reports regarding the program implementation

#### **4. Discussion**

The present study aimed at training and supporting elementary school teachers in fostering their students' awareness and use of skills to self-regulate reading comprehension. It was expected that, after training, the participant teachers should be able to effectively instruct the defined SRL skills to their students. Moreover, it was expected that teachers should positively comment on their experience of implementing the program.

Overall, the mean observation ratings of teachers' implementation of the instructional program on SRL could be considered satisfactory for the total of the instructional units confirming, thus, our expectations. More specifically, the participant teachers were adequate to highly rated in following the units' defined goals, exploiting the suggested discussion key points and materials, and making the units' goals and skills clear to the students. The ratings regarding the teachers' overall attainment of the goals of the units stand above the mean of the rating scale as well. Previous studies presented evidence for the benefits of teacher training on their own SRL knowledge, skills and practice (Kramarski & Revach, 2009; Perels et al., 2009).

Further observation notes provided additional information on strengths and limitations of teachers' implementation of the program. Teachers effectively taught cognitive skills in order to support students' text comprehension and managed to involve and inspire their students to actively participate into the training program. However, the teachers appeared to need further education and longer term support to adopt an emphasis on learning how to learn, i.e., the metacognition element of the program, and promoting an independent, autonomous, student-regulated learning. Their focus was more on providing knowledge and conceptually elaborating the text and less on training students' skills for planning comprehension or evaluating and reflecting on learning outcomes. Teachers' difficulties in connecting SRL theory with instructional practice is a common finding with previous studies (e.g., Dignath & Buettner, 2008; Kramarski & Revach, 2009).

Regarding teachers' evaluation of the program implementation, the means of the teachers' ratings showed that the teachers rated the instruction of the units as rather easy, the material helpful and the defined goals of the units and skills to be instructed as quite clear to the instructor. Despite these positive reports, the instructional program needs to be evaluated from larger numbers of educators.

One of the limitations of the present study was the small number of participant teachers. Future research should repeat the training program with larger number of teachers and also apply an experimental methodology to further assess the effectiveness of implementation. Moreover, it seems that there is a need for extensive and long term training of in-service teachers in order to help them to gradually move their instruction from teacher-regulate to student-regulated learning. Individual differences between teachers with regard aspects of the implementation and adherence to the program's goals were evident from both ratings of the structured observation form and from observation notes. These differences might lie on teachers' differences in knowledge and beliefs about instruction that matter for the way and the efficiency of an implementation (Spruce & Bol, 2015; Woolfolk Hoy, Davis, & Pape, 2006). Training teachers in instructing SRL and metacognition must be carefully designed with a focus on influencing teachers' knowledge, personal practice, and implementation in their classrooms (Spruce & Bol, 2015).

To conclude, research so far suggests the need for continued professional development of teachers in SRL strategies and their application to practice (Spruce & Bol, 2015). To adequately embed the teaching of SRL skills in authentic classroom

environments we must take into account a variety of personal, group and situational factors.

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## **8.2. An academic review on life and organization**

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### **Abstract**

*The main purpose of this study is to determine the general cynicism and organization cynicism levels of Pamukkale University Academicians. The study examines 179 academicians working for PAU. In this study, Wrightman's (1992) scale was used to determine general cynicism levels and Brandes's (1997) scale was used to determine organizational cynicism. General cynicism scale and organizational cynicism scale were applied to each participant. According to the study's findings, academicians' general cynicism and organizational cynicism levels were around midlevel. A positive, weak but a meaningful relationship is observed between general cynicism and organizational cynicism.*

**Key-words:** General cynicism, organizational cynicism, academicians

### **1. Introduction**

Organizational problems arise from unsuccessful and faulty practices of organization managements. One of these problems is organizational cynicism. To put it differently, it is the employees' cynical attitudes towards an organization. When the administrative categories are examined, cynicism proves itself to be an important concept in terms of organizational behavior. Etymologically, cynicism comes from philosophical roots; however, it turns out to be a completely different concept when examined in organizational aspect. As a result of these problems, employees' cynicism levels, who have negative attitudes towards the organization increases, which negatively affects work performance and, thus, organizational performance.

Organizations are aware that they need to pay more attention to their employees in order to maximize their activities, productivities, and profitability, and keep up with the competition in the market. However, the pressure a dynamic and complicated work life puts on employees usually causes a cynical attitude and, thus, causes a decrease in their productivities. Organization cynicism, which expresses the negative attitudes employees have towards the organization they work for, is currently perceived as an important threat risk (Karacaoğlu & İnce, 2013).

This study aims to examine and determine if certain academicians have a cynical attitude towards either life or the place they are working at and if there is

a meaningful relation between these two different concepts. In this context, cognitive structures, development, and extents of general and organizational cynicism are examined. A literature review was carried out about general and organizational cynicism. In the next section, data obtained from participants are revealed. In the final section of the study, a general review of the research has been made and suggestions were listed in accordance with the findings of this study.

## **2. Theoretical framework**

### ***2.1. General cynicism: An overview***

Cynicism was first shaped in the ancient Greece as a school of thought and life style. First known ‘Cynics’ ever lived are Socrates’s student Antisthenes, who lived between 444-365 B.C., and Diogenes from Sinop, who claimed he was ‘looking for an honest person’ with a lamp during daytime (Dean, Brandes, & Dharwadkar, 1998). Rumors held that Diogenes maintained his life in a barrel in order to completely strip himself from social needs (Gökberk, 1999). Within centuries, Cynical and Cynicism concepts were modified (Dean, Brandes, & Dharwadkar, 1998). Throughout the 5<sup>th</sup> Century B.C., Cynics ruthlessly mocked those who were fond of power, wealth, and material world. They aimed to reach the highest point in ethics and morals and atrociously attacked those who did not have the same attributes (Anderson & Bateman, 1997). However, in recent years, Cynics are more likely to be seen as pessimistic and heavy hearted individuals instead of ruthless critics (Mantere & Martinsuo, 2001).

There are various descriptions of general cynicism found in literature. This is caused by the fact that cynicism is included in many disciplines of social sciences. As it can be understood from the etymological meaning of the word, it mainly consists of philosophical basics; however, it also contains religious, political, sociological, administrative, and psychological meanings, which was, thus, studied in those disciplines too. Individuals who believe that people only look out for their own interests, do not care for anybody else and presume everybody is a self-seeker are defined as ‘Cynics’, while the concept, which is trying to explain this idea is called ‘Cynicism’. Cynicism can also be described as the insecurity and negative feelings towards an individual, a group, an ideology, a social contract or an organization, as well as a special attitude shaped with disappointment and frustration (Anderson & Bateman, 1997). Cynicism usually reflects an ideology, according to which it is believed that other people are worthless and selfish, as a trickster (Barefoot, Dodge, Peterson, Dahlstrom, & Williams, 1989; akt.Kasalak & Bilgin Aksu, 2014). In its simplest form, cynicism is defined as ‘the state of not liking and trusting other people’ (Brandes et al., 2008, p. 235).

People who believe in Cynicism usually do not care about the traditions of the society they are living in and mock the values, which connect people to one another. Even though most people define Cynics as careless people, this is not a true definition. On the contrary, Cynics isolate themselves from society and try to find peace and virtue within themselves as a result of caring too much and not being able to find a solution. The only possible way to remove a cynical view of an individual is to deal with the problems, which caused the cynical view to form in the beginning.

## ***2.2. Organizational cynicism***

The concept of cynicism is divided into two terms in literature; General Cynicism and Organizational Cynicism. On the one hand, general cynicism is usually defined as ‘the general cynicism a person has towards life and certain aspects of life, not especially towards a person/subject’ (Eaton, 2000, p. 7). According to Wrightsman (1992), general cynicism ‘is a belief that human nature and other people are neither trustworthy nor sincere’ (Scott & Zweig, 2008, p. 100). On the other hand, organizational cynicism is defined as the demeanor, in which an individual has negative thoughts about the organization they are working for and have anger, disappointment and other negative feelings towards it (Brown, Cregan, 2008; Naus, 2007). Organizational cynicism concept is examined under three main dimensions by Dean (1998): cognitive, affective and behavioral.

Even though there isn’t a common description in the literature, Dean et al. (1998) made one of the most commonly used descriptions of cynicism. According to that description, organizational cynicism is the consistent negative attitudes an employee displays towards the organization they work at borne from negative feelings and beliefs. This negative attitude can be towards the whole organization or only a part of it (Naus, 2007). In almost every organization, cynical employees are present (James, 2005).

As it can be understood from the concepts, organizational cynicism is not caused by a single occasion in low or high levels. Determining these causes is crucial to make true comments. Karacaoğlu and İnce (2012) listed the reasons for the increase in organizational cynicism levels: Employees’ thinking that there are injustice and hypocrisy in organizational applications, a decrease in organizational support, a downsizing in the organization, unsuccessful change attempts, unqualified leader-member interaction, disrespect and frivolity towards employees, lack of meaningful business, employees left out of decision making processes, employees adopting more selfish organizational policies, and a violation of psychological contract. Organizational factors like these cause an increase in the organizational cynicism, where an individual forms a negative view of the organization they work for. If these factors can be kept at minimum, organizational cynicism levels will be lower. Kanter and Mirvis(1989) stated that, in order to keep organizational cynicism levels under control, the organization has to provide equal practices to each employee, adopt better work hours and work standards and provide an open relationship between employees and the administrative team (Abraham, 2000).

There are many factors related to cynicism. Among these factors, job satisfaction, organizational differences, education levels, income levels, job functions and employees’ trust levels towards the organizational decision making processes can be listed (Fero, 2005). Furthermore, demographic factors, such as race, sex, and marital status, and organizational factors, such as service period, are amongst important determining factors of cynicism levels (Hickman et al., 2004).

## **3. Literature review**

“Minnesota Multiphasic Personality Inventory” is a study conducted in the University of Minnesota in 1940’s. It is accepted as the first modern study on cynicism and provides the basis for first cynicism scales (Delken, 2004). Research on Organizational Cynicism first began in late 1980’s and early 1990’s (James, 2005). Kanter and Mirvis (1989) stated that 43% of the American workers showed signs of organizational cynicism (Akt. Bommer, Rich, & Rubin,

2005). Furthermore, Mirvis and Kanter (1991) stated that 48% of all workers encounter cynicism in their study. Reichers, Wanous, and Austin (1997) stated that 53% of workers encounter high levels of cynicism.

The concept of cynicism is a prominent subject in organizational behaviors, especially in the latest years. Although studies about this subject are fairly new in Turkey, it is possible to find a few studies on cynicism. For example, Efälti, Gönen, and Öztürk (2008) conducted a research where they examined the cynicism levels of 48 manager assistants working at Akdeniz University and determined that cynicism levels of those assistants are around midlevel. When Kalagán and Güzeller (2010) conducted the same research study on 325 teachers working at primary and secondary schools in Antalya city center, they ended up with the same findings and determined that the teachers' cynicism levels are around midlevel. In Atalay and Şahin's (2010) study, the concept of organizational cynicism is closely examined with the perspective of trust, while the relationship between them is discussed. Karacaoğlu and İnce (2013) researched the effect of positive organizational behaviors on the organizational cynicism levels of manufacturing industry workers. Yıldız (2013) investigated the relationship between primary school teachers' organizational commitment and organizational cynicism and organizational dissent perceptions. The findings of the study revealed correlation between primary school teachers' organizational commitment and organizational cynicism and organizational dissent perceptions. A high negative correlation was found between the organizational commitment and organizational cynicism perceptions, while a moderate negative correlation was found between organizational commitment and organizational dissent perceptions of primary school teachers. In Bölükbaşıoğlu's study (2013), the relationship between teachers' perceived organizational justice and organizational cynicism attitudes are examined. According to the findings, in this research there is a negative relationship between teachers' organizational justice perceptions and organizational cynicism attitudes.

When these studies are closely examined, it can be said that cynicism is getting more and more common in societies and levels of encountering cynicism are increasing in time. Furthermore, it can be said that cynicism is now perceived as a serious problem most societies are encountering. When the organization employees' behaviors and attitudes are consistent with the organization goals and aims, organizational performance will be enhanced. However, it is expected to diminish in opposite circumstances. In a circumstance where 'humans' play a very important role, cynical employees are present in almost every organization. This is the main reason why it is very important to conduct a study to determine academicians' general and organizational cynicism levels working at universities and the variables affecting those levels. Based on the literature review conducted for this study, it was seen that there are very few studies on general and organizational cynicism, which mostly consider managers and employees working in various industries other than education sector. Furthermore, a study examining and reflecting the relationship between academicians' general and organizational cynicism levels was not found. This study may be seen as a basis for the upcoming studies on what needs to be done in order to diminish the cynicism levels of academicians, who work for one of the most important educational institutions to direct a country's future. Not a single problem can be solved before determining the cause. This is why, this study is important to determine what causes academicians' high cynicism levels.

#### **4. The goal of the study**

The main goal of this study is to determine the general and organizational cynicism levels of academic faculty. Another goal of this study is to determine if there is a meaningful relationship between an individual's general cynicism levels and organizational cynicism levels. In order to fulfill these goals, answers to the questions below will be looked for:

1. What are the academicians' general and organizational cynicism levels?
2. Is there a significant relationship between academicians' general and organizational cynicism levels?

#### **5. Method**

##### **5.1. Research design**

The research is a descriptive study based on the survey model. Survey models are approaches that aim at describing either a past or an ongoing situation, as they exist. The event, individual or object subject to the study is defined within its own circumstances and as it is (Karasar, 2002). If the purpose of a study is to make descriptions related to many objects or people, the survey model is considered the most suitable one (Balci, 1995).

##### **5.2. The participants**

The participants of the study are 178 academicians who work for Pamukkale University Educational Faculty. An attempt was made to reach them all. 27 data collection tools have been removed from evaluation. The study is performed with 151 data collection tools.

##### **5.3. Data collection tools**

In this research a data collection tool consisting of two parts was used. The first part, Wrigtman's scale (1992) was used in order to determine the general cynicism levels. The second part, Brandes's scale (1997), is used to determine organizational cynicism levels. Erdost et al. (2007) made the adaptation of both scales into Turkish norms and decided that both the general cynicism scale (Cronbach Alpha: 0.827) and the organizational cynicism scale (Cronbach Alpha: 0.913) are highly reliable. Both questionnaires used a 5-point Likert-type scale.

##### **5.4. Data analysis**

The significance level of the obtained results was accepted as 0.05, while the data were analyzed by using SPSS 20.0 package software.

#### **6. Finding and results**

##### **6.1. Participants' general cynicism levels**

The reliability analysis conducted on the general cynicism scale determined the scale's reliability value as 0,827 according to Cronbach's Alpha value. This value shows that the scale is highly reliable. General cynicism scale articles and standard deviation levels are given in Table 1.

**Table 1**  
*Academician's Views about General Cynicism Levels*

Subjects	N	$\bar{X}$	Ss
<b>Cognitive Dimension</b>			
Most of the people evade tax if they find an opportunity.	151	3,11	0,78
Most of the people evade tax if they find an opportunity.	151	3,43	1,03
Most of the people evade tax if they find an opportunity.	151	3,25	0,98
People don't really care about others, but they seemed so.	151	2,92	0,95
Most of people are not honest about what they want to do.	151	2,87	0,99
<b>Behavioral</b>			
In an exam, a typical student, who has ethical standards, cribs, if everyone else cribs.	151	3,23	1,05
Most of the people are jackanapes.	151	2,96	1,02
Most of the people get on a bus without paying if they are sure not to be caught.	151	2,77	1,10
<b>Affective</b>			
People state that they have ethical standards about honesty and morals, but few of them adapt them.	151	3,57	1,00
In today's world, it is heartbreak to see generous people since most of the people take advantage of them.	151	2,60	1,09
Most of people don't like to do whatever they can to help others.	151	2,56	0,95
<b>GENERAL CYNICISM</b>		3,01	0,63

When Table 1 is examined in detail, the article 'People state that they have ethical standards about honesty and morals, but few of them adapt them' has the highest average (3,57) agree level and the article 'Most of the people don't like to do whatever they can to help others' has the lowest average (2,56) disagree levels.

### **6.2. Participants' organizational cynicism levels**

According to the reliability analysis conducted on the organizational cynicism level scale, the scale's reliability is determined as a Cronbach's Alpha value of 0,903. This value shows that the scale is highly reliable. Organizational Cynicism scale subjects and sub-dimensions averages and standard deviation values are given in Table 2.

**Table 2**  
*Averages Related to Organizational Cynicism Tendency and sub-dimensions and Standard Deviation*

Scale Subjects	N	$\bar{X}$	ss
<b>Affective</b>			
I determine very little correspondence between what is said to be done and what is actually done in the faculty I work at.	151	3,03	0,82
I believe that promises and actual behaviors are different than each other in the faculty I work at.	151	3,23	1,04
There is an inconsistency between policies, aims, and implementations of the faculty I work at.	151	3,34	1,05
I usually doubt whether a promised application will actually be realized or not in the faculty I work at.	151	3,11	1,02
I usually mock with the mottos and applications of the faculty I work at.	151	2,52	1,12
Employees are expected to something but get rewarded for something else in the faculty I work at.	151	2,96	1,04
<b>Cognitive</b>			
I encounter stress when I think about the faculty I work at.	151	2,40	0,90
I feel anxiety when I think about the faculty I work at.	151	2,25	0,97
I get angry when I think about the faculty I work at.	151	2,50	1,13
Relations in the faculty I work at upset me.	151	2,25	0,99
<b>Behavioral</b>			
I criticize the implementations and the policies of the faculty I work at with other employees.	151	2,64	1,03
I talk about how things work at the faculty I work at with other employees.	151	2,69	0,89
I complain about the things going on at the faculty I work at to my other friends.	151	2,80	1,16
When the faculty I work at or the employees are mentioned, my colleagues and I share a meaningful glance.	151	2,93	1,19
When the faculty I work at or the employees are mentioned, my colleagues and I share a meaningful glance.	151	2,42	1,04
When the faculty I work at or the employees are mentioned, my colleagues and I share a meaningful glance.	151	2,62	1,13
<b>All Scale</b>		<b>2,75</b>	<b>0,71</b>

When Table 2 is examined in detail, it is seen that participants answered, "partially agree" to the statement "I believe that promises and actual behaviors are different from each other in the faculty I work at" with the highest average (3,34). The lowest averages belong to the statement "I encounter stress when I think about the faculty I work at" and "I get angry when I think about the faculty I work at", while subjects with the averages of "do not agree" (2,25).

**Table 3**  
*Correlation Analysis regarding General Cynicism and Organizational Cynicism*

		General Cynicism	Organizational Cynicism
Spearman's RHO	General Cynicism	Correlation Coefficient	1,000
		Sig. (2-tailed)	-
		N	151
	Organizational Cynicism	Correlation Coefficient	0,222**
		Sig. (2-tailed)	0,006
		N	151

Finally, whether a relationship is present between general cynicism and organizational cynicism levels or not was tested with Pearson and Spearman Correlation. As a result of the analysis, a weak but meaningful relationship between behavioral and affective dimensions of general cynicism and affective dimension of organizational cynicism. Likewise, a weak but meaningful relationship between the cognitive dimension of general cynicism and affective

dimension of organizational cynicism was determined. The results of correlation analysis are given in the Table 4 below.

**Table 4**  
*Relationship between General Cynicism and Organizational Cynicism*

General Cynicism	Dimensions	Cognitive	Affective	Organizational Cynicism Behavioral
	Cognitive	,123	,292**	-,002
	Behavioral	,168*	,215**	,101
	Affective	,146	,225**	,085

\*p<0.05, \*\*p<0.01

## 7. Conclusions and recommendations

Both types of cynicisms, whether it is called “organizational cynicism” and defined as the negative attitudes an individual has towards the organization they are working for or “general cynicism” and defined as the negative attitudes an individual has towards life itself, contain negative behaviors and consist of three dimensions; cognitive, affective and behavioral. According to the relevant literature review, very few studies on the academicians’ cynicism attitudes were found. In this study, the main aim was to determine the academicians’ general and organizational cynicism levels working for PAU Faculty of Education. Within the scope of this study, academicians’ general and organizational cynicism levels were determined to be around midlevel.

As the sub-dimension averages of organizational cynicism were examined, it was determined that academicians’ cynicism levels in terms of affective dimension are usually higher than those regarding cognitive and behavioral dimensions. According to those values, it can be said that organizational cynicism is mostly seen in affective dimension. It means that, even though most academicians admit that they have cynic attitudes organization-wise, they usually do not act it out in behavioral dimension. However, in general cynicism sub-dimensions, it was seen that sub-dimension averages were close to each other. On the contrary to organizational cynicism sub-dimension averages, the cognitive dimension in general cynicism has the highest average ( $x=3,11$ ).

When the relationship between the sub-dimensions of general cynicism and organizational cynicism are examined, it was determined that there is a positive, weak, and meaningful relationship between cognitive dimension of general cynicism and affective dimension of organizational cynicism. Furthermore, a positive and very weak relationship is also determined between the behavioral and affective dimensions of general cynicism and cognitive dimension of organizational cynicism. This conclusion shows similar results to Tokgöz and Yılmaz’s study (2008) conducted among 346 employees working in a hotel in Eskisehir, Erdost’s study (2007), Tokgöz and Yılmaz’ study (2008) and Sur’s study (2010).

According to the results of the study, it can be said that organizational cynicism attitudes are not very common among academicians. However, it is not possible to

generalize these outcomes due to the limited reach of this study. However, this study can be used by the organization for development purposes, since the study reveals certain attitudes and behaviors towards this particular organization.

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### **8.3. Why do adult educators need to know their personal educational philosophy?**

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#### **Abstract**

*This paper aims to highlight (a) the reasons for which adult educators should be mindful of the philosophical framework that governs their practice and (b) the ways in which they can reclaim it as a result of following a certain process of self-evaluation and self-characterization. The determination of the educational philosophy is not sufficient for resolving the problems adult educators face. Evidently, the proper institutional arrangements and policies about adult learning should be in place. Nevertheless, being mindful of the educational philosophy that underlies educational practices constitutes a necessary precondition for the adult educators' effective response to modern challenges.*

**Key-words:** Educational philosophy, adult education, self-evaluation

#### **1. Introduction**

To what extent is the knowledge we have accumulated throughout our teaching careers from our commitment to certain educational convictions and social values reflective of what actually happens in practice? How exactly does this kind of knowledge inform our practices? How successfully have we integrated theory and practice? How do we know this? All these are legitimate questions which anyone working in adult education should raise if one is really interested in pursuing meaningful and effective educational projects.

Determining our personal educational philosophy enables us to acquire conscious knowledge of the reasons for which we uphold certain convictions and evaluations, further develop critical thinking and insight, become the only legitimate authors of our conscious choices and teaching methods and intervene in the curriculum. Without exaggeration, acquiring a personal “working” philosophy amounts to discovering and reclaiming the process for examining and find-tuning our beliefs as a real constant or a definitive, although non-apparent, organizing structure governing our educational practice (Apps, 1989, p. 27).

This paper stresses the indivisibility of theory and practice in adult education. It exploits this idea as a useful background upon which we develop our arguments about: (a) the reasons for which adult educators should be mindful of the philosophical framework governing their thought and practice and (b) the ways in which adult educators can reclaim their personal educational philosophy as a result of following a process of self-evaluation and self-characterization.

#### **2. Why do we need to know our personal educational philosophy?**

Adult education constitutes a complex and multi-dimensional field that is affected by theory, research and educational applications and policies. Widespread is also the

conviction that the weight for the proper planning and the implementation of any learning process falls upon the shoulders of adult educators. Consequently, their role is extremely demanding and complex, since they should complete educational activities in response to the learners' needs and expectations.

Given that any attempt to analyze the role of adult educators on a scientific basis is immensely difficult (Jarvis & Griffin, 2003), the additional task of determining their personal educational philosophy enhances the difficulty even further. By "personal educational philosophy" it is usually meant the theoretical background that underpins our educational convictions and practices. In fact, there are three options in relation to the way a certain theoretical framework may be said to constitute our "personal educational philosophy": we may follow a theory unconditionally or we may enrich the theory with elements derived from other theoretical approaches in an internally consistent fashion; we may, finally, choose a certain framework as a centre around which we incorporate elements of other theories consistently.

In any case, the discussion about our personal educational philosophy hinges upon the need to secure the unity of theory and practice. Theory without practice may easily lead to an excessive or sterile idealism, whilst practice without its theoretical underpinnings may lead to malign empiricism and unreflective activism. Philosophical theories do not describe the world nor do they aim at successful predictions; their concern is on what should be done in certain situations on both individual and social levels. In this spirit, philosophical theories of learning offer interpretative approaches and may be (a) conceptual in style and method or (b) practically oriented or even socially intervening in response to actual problems.

Back in 1973 Apps (1989) plausibly argued that the first step in the development of any educator is the determination of their educational philosophy. He suggested that the implementation of any educational program should place all questions about the reasons of teaching and learning before questions about the content and the means of teaching and learning. When educators are conscious of their personal educational philosophy, they are able to justify their values and beliefs and discern what is educationally significant. In a way, this helps them be critical and avoid any ideological dependencies and dogmatisms (Kumar, 2012). They may also decide upon the method of communication with the learners or their obligations to and relationships with them. As a result, they define their roles accordingly and clarify the way their work relates to broader social problems (Bergevin, 1967; Merriam & Brockett, 1997). Of course, the contribution of one's personal educational philosophy is never complete, as each educator undergoes the effects of personal change and development and is also depended upon issues of its practical application and achievability.

### **3. The multiplicity of educational theories**

Philosophical theories of education describe, explain and justify our beliefs about several aspects of education. They are always formulated in a systematic manner and try to avoid contradictions and answer questions in terms of consistency. They may be strictly analytical or aim at the achievement of a synthesis; they may constitute an individual guide or, finally, assume a socially critical mission.

The question about one's personal educational philosophy develops into a set of other equally important and profound questions about what adult educators believe in relation to the purpose of education and the role of learning, their own role and the learners' role and the influence that social culture exercises upon them. Having said that, it is only plausible and useful to consider what follows, how the main educational theories in adult education position themselves in relation to these points. Adult

educators should realize that their commitment to a particular theory substantially influences their stance to all these points.

### ***3.1. The purpose of education***

According to Elias and Merriam (1995), any adult educator is directly influenced by the educational purposes of the program they are about to realize. For example, if the purpose of education is to develop the abilities of the mind (liberalism), the purpose of educators is to educate adults in a broader sense, i.e. mentally, morally and psychologically. Should the purpose be to bring about a behavioral change that will secure the educators' survival within society (behaviorism), their role is to facilitate this change. In the case where the purpose of education is to transmit changes for the sake of social progress (progressivism), the educators' role is to provide learners with practical knowledge and skills that are necessary for social reform. If the purpose is to render individuals open to change (as humanistic theories contend), the educators' role is to reinforce personal development and self realization. Last but not least, if the purpose of education is to induce social changes via educational means on social, political and economic issues (radical theory), the educators' role is to change the structure and the political culture of an entire society.

### ***3.2. Learning, educators and learners***

In the realm of formal education, learning is usually regarded as a process with no immediate practical implications or immediate personal benefit. In this realm, learning is an obligatory process in order to respond to the learner's needs and falls upon the teachers' and educators' shoulders to motivate learners. In contrast, in the field of adult education, adult learners actively seek what educators are able to offer them, under the condition, as Wang remarks (2003), that what they seek is (or may be) applicable in their actual living situations. Besides, it is not surprising that adult learners comprise a heterogeneous group (Knowles et al., 1998) and are consequently obliged to adopt different kind of responses and methods toward them. On this basis, it is highly important to understand the existence of heterogeneity as it appears in the form of many distinct (and sometimes conflicting) educational perspectives. In other words, both our failure to discover our philosophical underpinnings and our endorsement of the wrong educational philosophy equally result in the failure to serve the adult learners' needs successfully.

McKenzie (1985) discussing the philosophical orientation of adult educators offers a categorization of adult educators on the basis of the scope of the autonomy that is allowed to learners within each theory: Those educators, who endorse liberal educational theories, claim that what adults wish to acquire in and through learning is knowledge in the broader sense and not limited information. Adult educators, who espouse philosophical humanism, regard adult learners as self-directed individuals with strong personal motivation. On this basis, adult learners are able to assume responsibility for learning and their personal development. The disciples of progressivism think of adult learners as having unlimited abilities to develop through education. In this context, the fundamental features of learning are the learner's needs, interests and experiences. In the case of those educators who follow radical educational theories, they stress that the both educators' and learners' roles are equally important for learning. In contrast to these theories, followers of behaviorism seek to control the learning environment by providing sets of strict rules. Adult learners are able to assume an active role in learning, practise new behavioral patterns and accept feedback always within the context of the strict rules.

Generally speaking, the adult educators' mission is to help learners develop a positive stance in relation to learning so that the latter may view learning as their own affair and responsibility. In most cases, educators assume the role of the mediator no matter how many directions and prescriptions they offer the learners. Brookfield (1986) and Collins (1986) argue that the extent of the educators' mediating role depends upon the particular philosophical theory they follow. For example, in philosophical humanism, educators assume a mediating and cooperative attitude allowing learners to be responsible for what they learn. In progressivism, educators assume a much more guiding role aiming to both motivate learners and learn from learners themselves and develop a relationship of reciprocity between themselves and the learners. On the contrary, behaviorists design themselves the learning environment and have the tendency to "translate" learning outcomes as the result of their own design and control. Finally, radical educators suggest learning outcomes; they are open to modifications and encourage equality with the learners.

As far as teaching methods are concerned, they are also said to influence educators (Brookfield, 1986): Lectures and critical reading are the favorable approaches in liberal theory; intensely programmed teaching (usually with the help of computers) is preferred by behaviorists; scientific approaches and problem-solving techniques attract the attention of progressivists; experiential learning is encouraged by humanists; finally, critical dialogue is the main method used by radical educators.

#### **4. Suggestions and conclusions: The role of self- evaluation questionnaires**

Self- evaluation questionnaires constitute a useful means that enables educators to place themselves within one, or perhaps more, educational theories. It is possible that educators may be aware of their philosophical commitment on a simple habitual level. However, the crucial point is that they become fully mindful of their educational convictions and values.

Self- evaluation questionnaires (a) may refer to strategies and learning principles (PALS, Conti, 1978; ATLAS, Conti & Colody, 2004). More specifically, the ATLAS (Assessing the Learning Strategies of Adults) questionnaire concerns the strategies of learning to be followed by adult educators. Completing this questionnaire the educators result in one of three final choices which characterize them as either "collaborator" or "navigator" or "problem solver". The PALS (Principles of Adult Learning Scale) questionnaire is a self- reference, self- evaluation and self- interpretation questionnaire that unite several learning principles. Initially, it has been formed in order to detect the extent of adult educators' commitment to the principles of adult education and, then, to record the effectiveness of particular teaching methods in the educational process. It comprises forty four questions based on the Likert scale (Conti 1983, 2004). The result determines the extent to which an educator is teacher- centered or student-centered in relation to seven variables, what sort of activities he encourages, the extent of his guidance, whether he relates the content of his teaching of the previous experiences and needs of the learners, the kind of relationships he establishes and the extent of his participation and flexibility in various circumstances.

Self- evaluation questionnaires (b) may investigate the influence an educational philosophy has upon educational practice (PHIL, Conti, 2004 and PAEI, Zinn, 1983). Conti's PHIL (Philosophies Held by Instructors of Lifelong-learners) questionnaire and Zinn's PAEI (Philosophy of Adult Education Inventory) place emphasis on the extent to which an educational philosophy influences adult educators. The PHIL questionnaire is a flow-chart questionnaire and comprises four items, each item resulting in 2 choices, until one final places himself under the auspices of a philosophical educational theory.

Although the PHIL questionnaire depends upon strong multi-variable statistical procedures, it is generally regarded as very simple. This is the main reason that it is overshadowed by Zinn's PAEI. The latter is a questionnaire with 15 incomplete sentences, each one resulting in five different choices reflecting the previously mentioned theories. This is an advantage, since it is the only questionnaire that systematizes its questions in categories correlative to the categories of what Apps (1973) developed as "a working philosophy" (i.e. the learner, the purpose of adult education, contents or subject matter, the learning process and finally, the beliefs about the role of adult educators).

No educational philosophical theory enjoys a privileged status. Besides, questionnaires do not mark a contest opportunity for theories; if one is interested in such an assessment, one should simply look for the proper methodological tools elsewhere. It is also possible to come up with a self-evaluating result according to which, although the educator has an initial philosophical orientation, he may still discover his lingering between two different theories.

The self-evaluating character of such questionnaires implies that they are not to be imposed compulsively by any educational institution upon adult educators. This agrees with their nature and destination as tools of self-reference and self-characterization. As they do not violate the autonomy of anyone who completes them, it is necessary to consider the possibility of encouraging their use in all adult learning educational institutions and organizations, given that the kind of knowledge they procure is vital for the effective realization of all educational tasks. This may be much more evidently understood in the context of formal education, where no such questionnaires are available rendering the conscious pursuit of learning and teaching a rather theoretically unfounded affair.

Self-evaluating questionnaires absolve educators of the usual stress involved in modern educational evaluation schemes. This is achieved by their offering tools for outlining the educational profile of the people involved, certainly not for testing their knowledge and general qualifications for employment purposes. In addition, no authority exists which decides about the time and the frequency of their completion, although it is true that educators should repeat the process periodically, as they undergo the effects of experience and development.

Although we have explicitly stressed that such questionnaires do not test knowledge, skills and qualifications, it is evidently clear that some degree of prior knowledge is required on behalf of those who complete them. This is important because it is only on the basis of such prior knowledge that anyone who completes the questionnaires is able to understand and reclaim their results in their personal development. Moreover, one should not forget that the results are to be analyzed, interpreted and evaluated by all educators themselves; it is they who are responsible for reaching some useful conclusions. Of course, educators, particularly, when they are in the initial stages of their career, may feel the need to ask for assistance by somebody who is educationally more experienced or simply more conscious of the need to harmonize theory and practice. In this case, one may indeed discover a discrepancy between one's initial convictions about learning, teaching and methodology and the findings of having completed the questionnaire. Should that case arise, one may ask for assistance or even to be observed at work; this may be of some help in order to reach a successful comparison between one's personal theoretical background and the way one conducts oneself in educational practice. The same result may be reached without external assistance or intervention if one is willing to repeat the evaluating process several times and reflect critically upon the findings of each evaluation.

It is worth noticing that the project of determining one's personal educational philosophy is a necessary but not a sufficient condition for overcoming the problems of modern adult education. To that one may add that what is further needed is the political and institutional support as well as a robust broader culture about adult learning. Nevertheless, being mindful of the educational philosophy that underlies educational practices constitutes an undeniably necessary precondition for the adult educators' effective response to all modern challenges.

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## **8.4. Environmental influences on communication of Greek family: A comparative case study**

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### **Abstract**

*This study deals with the types of communication and the differences regarding the participants' behaviors and with the nonverbal communication of the Greek family members, according to their area of living (urban or island environment). Eight semi-structured interviews with open questions, whose answers were recorded both in writing and with voice recording devices, consisted the basic method of data collection. The concluding statements of this research compose a picture of the influence that the environment has on family communication, with positive effects on the quality of the nutrition, entertainment forms, management of unacceptable children behavior, and the development of interpersonal relations amongst family members. Findings of this research are related to the quality of the school atmosphere and, consequently, to the instructional effectiveness which is of interest as far as the teachers' education and training are concerned.*

**Key-words:** Family communication, environmental education, parents

### **1. Introduction**

According to the psychological approach, communication is perceived as an interpersonal process during which a person who intends to transfer a message encodes it either through speech or body language or through both of them. Furthermore, they convey it after having further enriched it with emotional, beyond cognitive, content. Thus, the psychological approach could be expressed with the following comprehensive definition (Hurgie, 1995) "Communication is every recognizable, conscious or unconscious, intentional or unintentional behavior through which a human, willingly or unwillingly influences the perceptions, feelings, emotions, thoughts, and actions of others and vice versa with the aim of mutual understanding" (p. 27). The institutional function of a family accomplishes an emotional and a practical task so as to cover timelessly and successfully both the immediate functions and biological needs of its members and their psychological quests. Family communication, in a verbal or a nonverbal context, sustains and reinforces the bonds among the family members ensuring timelessness in the family's structure and cohesion, despite the constantly altering social environment (Singly, 1996). Family communication is of vital importance in the training of educators both for the child's adjustment and his smooth procession through the educational levels and the gratification of his emotional needs. Hence, family communication does not only concern the narrow frames of the family environment but also the functions of the educational system, especially in the case that it reflects the levels of communication between school and family (Stamatis, 2013). Within this framework, the present research constitutes a comparative case study of

communicative behaviors of four-member families who live in areas of the Greek mainland and island. In the theoretical framework of this study, the research axes refer to three main views which are the institution of the family, family communication and natural life environment influences.

### ***1.1. The institution of family***

Theoretically, the institution of family is the cornerstone to ensure the progress, retention and renewal of human society. Consequently, the way people coexist in their family background is considered to be extremely significant for society. It is recommended that there are firm relationships within standard social roles (husband, mother, son, brother) (Mousourou, 1998). The family is the backbone of the entire human society, whose role is to relay civilization, tradition and beliefs. Moreover, it is the most appropriate place to develop values, principles, rules, respect and solidarity.

It is a fact that the family plays two main roles: a sentimental and practical role. Therefore, it functions to satisfy the diverse needs of its members. As part of a family, members gain many experiences and are exposed to different sentiments. Although social and ethnic groups are believed to be important, the family undoubtedly plays the most important role in humans' social progress. From a pedagogical perspective, the role of the family is not limited to providing a secure and familiar environment. Parents must constantly take an interest in their child's/children school life and performance.

### ***1.2. Communication in the family***

As Stamatis (2013) mentions, "communication becomes perceivable considering the psychological approach" (p. 32). It is argued that the family's communication is an intrapersonal process through which people want to transmit a message either through speech or body language. Furthermore, speech and body language help people to express something emotionally (Pease & Pease, 2006). Therefore, the psychological approach can be conveyed with the following definition according to Stamatis (2015) "Communication is every recognizable, conscious or unconscious, intentional or unintentional change of behavior. People can intentionally or unintentionally influence the perception, feelings, thoughts or actions of others through communication" (p. 97). Communication functions as a key component in the daily life of the family. It is an irreplaceable part of human coexistence as it is in the centre of sustainable, perpetual, normal conscious processes, resulting in self-expression and a deeper understanding of the self (DeVito, 1988). The necessary component for every communicative interaction is the presence of two participants. Undoubtedly, the understanding of a common code between the participants is the most significant and necessary factor of communication. The sender, the message, the receiver, the means and the result are the most structural parts of the communication process. The other two parts, which define why we want to communicate, consist of the context and the aim or necessity of communication.

Communication is incomprehensible without expressions or a person's expressiveness. The driving force which propels expression as a means to communicate is known as "channels of communication". It is divided into two main groups: channels of communication which are connected to verbal communication; and channels of communication which are connected to nonverbal communication; both groups have an impact on interpersonal relationships (Argyle, 1990). Both verbal and nonverbal communication within the family maintains bonds between members and ensures a substantial basis for the future. A child living within such a family environment learns how to behave in accordance with social norms, therefore, forming a personality and social behavior (Papadaki-Michaelidi, 1997).

The significance of family communication is of paramount importance when educating teachers as they have the opportunity to understand the needs, advantages or abilities of each and every student. As a result, communication within the family is not only relevant to the family environment but also to the educational system.

### ***1.3. Influences of the environment of living***

People play an integral role in the ecosystem while they are subject to the rules of nature, as they are dependent on the environment in which they live. The environment which a person creates is defined as “anthropogenic”, whereas the natural environment is something created by nature in lap years. The natural environment, therefore, is more balanced than the anthropogenic one. The natural environment determines the rules by characteristics of a place, such as the ground morphology, the altitude, the vegetation, the flora and fauna and the weather conditions. All these factors are parts of an ecosystem which influences and regulates what people plan to do regarding their home, diet, education, entertainment and future aspirations.

With the passage of time, the family has dramatically changed due to economic, social and natural conditions. Undoubtedly, it is very complicated for the body to adjust to the environment. The process of adjustment depends on the development of the nervous system and brain. These in turn help people understand and process the information provided by their surroundings. Researchers studying how the environment of living influences learning abilities have shown that environments with many incentives lead to the development of complex behavior (Sygolitou, 1997). If one examines the current development of the typical Greek family, one could infer that nowadays it lacks sufficiency in terms of the production and consumption of goods. The Greek family can also be characterized by “functional loss”, as a lot of functions are carried out by social institutions other than family. The cause for this deficiency is that Greek young people left rural areas, decreasing family members in this way. In accordance to Papavasileiou (2013), “without freedom, people’s routines are liable to change anywhere by observing, walking, hiking and having choices to free oneself from restrictions. When green areas are added to cities and they are connected, the everyday life of the citizens is improved” (p. 24). The city is a place whose residents have many choices of healthy living which positively contribute to the decrease of illnesses. Furthermore, lower qualitative standards of everyday life may harm inner peace. Crowded public places create a variety of human interactions which form a complicated urban environment.

## **2. Method**

This study aimed to examine common, qualitative characteristics among styles of communication, communicative problems which are taking place, as well as the differences which affect Greek family members through nonverbal communication related to the area which they live in (island or urban environment). The study was completed in March 2015.

The basic purposes of the study were:

1. The designation of communicative styles among family members with an emphasis on their nonverbal behavior.
2. The description of how family members communicate when they have to make a decision.
3. The investigation of the family’s everyday habits concerning the climate and morphology of the place where the people live.

4. The investigation of how the natural environment influences diet, entertainment, mood and interpersonal relationships.

5. The investigation of how parents intervene and how family members communicate when they come into contact with divergent social behavior.

6. The examination of how children aim to communicate for a great extent, whereas parents avoid it.

The methodological approach included semi-structured interviews with two families (study's sample groups) which presented common characteristics, so that any statistical contrasts can be minimized. One of the families lives on the island of Kos-Dodecanese (island environment) and the other one lives in the city of Larissa-Thessaly (urban environment). Both of them consist of four members (two parents and two children, one boy and one girl per family). Each interview took place in a location and at a time which the participants chose beforehand. Ten open-ended questions gave to the interviewees the opportunity to freely express their ideas and opinions. The analysis of the qualitative data was mainly based on phenomenological and hermeneutical methods.

### **3. Results**

In relation to the above mentioned theoretical framework, the results of the research showed positive significant correlations with previous research, which is referred in literature review. These correlations were observed in terms of the communication, the frequency of communication and quality of children games in sample groups. Results showed that video games create limitations for self-development of children at home, causing them to depend on the television and lose their friends. On the contrary, it was observed that children who play in the yard were fit and reflective. Such group games demand team spirit, respect for rules and correct management of challenges.

A positive correlation was found between natural and anthropogenic environmental influences. Environment significantly influenced people's lives. For example, beaches, football fields, highways, noisy neighbors, shady yards or small terraces without views is something which all people have encountered with positive or negative feelings. The family of urban environment showed feelings of disappointment as a result of living with modern life style. They lacked the motivation to set short-term goals related to relaxation, entertainment and education. This accumulated tension was expressed in their interpersonal relationships, whose main feature was isolation, refusal to go out and trite everyday activities. On the other hand, living in a more natural environment – as a village on an island is- ensured calm and numerous of qualitative life activities for parents. They seemed to have cultivated relationships with their children by combining communicative activities, exercise, entertainment, a healthy diet, housework, gardening and games.

In relation to how a family copes with an illness, the results of the study support the related literature review. More specifically, it was obvious that an illness is a very stressful event, which disrupts family members and enforces nonverbal communication amongst them in order to cope with this problem. Islanders seemed to be more expressive and talkative in this case than city residents. In a communicative way, they try to encourage family members to overcome the problem using verbal and nonverbal strategies.

#### **4. Concluding statements**

In spite of the fact that this research could not be generalized for the whole Greek society, according to the above basic research results, one can bring into the light the following concluding statements:

1. Natural environment is not a decisive influence because quality, frequency and intensity of communication depend on a person's gender. Mothers are more concerned about feelings and demonstrate this via nonverbal signs in order to communicate efficiently. Nonverbal communication provides family members with calmness and self-confidence via lap, touch, gestures, nods and other body signs. Moreover, the nonverbal communication characteristics, which appeared in case of an illness, were common in all the families.
2. The environment of living doesn't affect the way which family members communicate during decision making. There was correspondence of views in both areas of the study with parents seeking their children's opinion.
3. Investigating family's everyday habits regarding the climate and morphology of the living area, it has been found that the environmental conditions affect people's hobbies and everyday life. Using leisure time, children's play and life styles are regulated by the natural environment in which they live. People who live in a village located on an island seem not to feel stressed and enjoy everything, whereas people who live in town feel stressed, experience a bad mood and monotony. This outlines the extent that a place of residence influences the quality of life, relationships and, consequently, the communication between family members.
4. Investigating the influence of the natural environment on diet, entertainment and interpersonal relationships it was evident that the climate, morphology of the area, green places, leisure outlets, sports, hobbies and beautiful natural surroundings play a significant role in family communication. The reason is that there are more substantial and frequent relationships among family's members in a village than in a city. In a village, the primary production makes most houses self-sufficient whereas in a city, big supermarkets play this role. People who live in an island's village can eat fresh vegetables, fruits, eggs, meat and fish, which come from their own production or from clean sea waters. Therefore, these people can be sure that they consume healthy products and are self-sufficiently earning money. On the other hand, the lack of free time in the city and the lack of fresh products make people buy fast food, which is dangerous and unhealthy.
5. Investigating how parents intervene and how the family communicates when its members are exposed to unacceptable social behavior showed that there were totally different types of confrontation. Moreover, a gap was found between how parents cope with various situations living in a village and city. City parents claimed that they felt under pressure during their communication and that they shouted at their children or they hit them in order to manage them in their everyday life. Undoubtedly, these parents are more distant, stricter and less tender than village parents because of stress and lack of free time. On the other hand, the family's conversations in the village were argumentative. People paid attention to small, everyday details concerning the children. These elements may first be associated with the parents' level of education and the couple's relationship. Additionally, they depend on parents' psychological and physical situation and their free time, elements which are associated with the environment of their living.
6. The investigation of communication management, when it is energized by children and avoided by parents, showed important differences when results were compared. Parents of the village stated that they always communicated with their

children whenever they wanted to. In case this kind of communication was not feasible, they decided to discuss their news and problems every night over dinner. Parents in the city were confused and unable to manage this everyday communicative issue. They claim that they don't want to listen to their children but finally, they let them speak in order to have a typical communication.

This comparative study shows that parents who live in a village of an island achieve better communication with their children through discussion and body language. On the other hand, parents who live in the city believe that communicating with their children is similar to a permanent need for satisfying their children's desires. A natural life environment and more free time largely affects family communication. Parents who live on an island's village usually have a calmer everyday life living without a lot of stress. So, they are more patient to invest in the communication with their children. On the other hand, something like this seems quite unfamiliar to those who live in Greek cities. Therefore, it is clear that the environment where families live affect parents' habits and, in turn, their mood and desire for effective communication.

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## ***9.Pre-service Teacher Education***

## **9.1. Students' with disabilities perspectives of service quality in special vocational training: A critical review of the student-as-a-consumer paradigm**

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### **Abstract**

*The service-recipient paradigm defines education as a service experienced by students of learning institutions which should care to satisfy students as service recipients. The student-satisfaction approach formulates an ongoing process of assessment, cultivating a trend for continuous quality improvement of the educational services that learning institutions provide. The student-as-product metaphor limits educational evaluation to the assessment of students' cognitive progress, while the commercial student-as-customer metaphor sees education as goods to be bought. The student-as-client paradigm, as revealed by research in vocational education, involves students with disability in the evaluation of the vocational training institutions' services, actualizing empowerment in education.*

**Key-words:** Vocational training, special education, disability, service quality

### **1. Seeking for service quality and satisfaction in education**

Evaluating satisfaction of recipients of services and assessing the quality level of services and products is not a recent pursuit, but gathered the interest of service providers of secondary production sector even before the industrialization era (Latu & Everett, 2000). In the marketing literature, customer satisfaction is considered to be a major result of the activity of marketing that connects the processes of buying and consuming with factors, such as attitudes, customer retention, buying repetition, positive mouth-to-mouth contact (Athiyaman, 2000; Harvis & Voyer, 2000). In relation to services provided by organizations, Heskett and Sasser (1997) indicate a direct connection between customer satisfaction of service and profitability of the organization that provides it, as satisfaction leads to loyalty and an increase in the consumption volume, counter-reducing operational costs for the organization. Organizations prosper because they are more efficient than their competitors in being considered as worthy by their customers (LeBlanc & Nguyen, 1997).

In the field of education, particularly, in countries where this sector has a private character, competition grows among institutions of higher education which provide educational services that are constantly put into assessment (Arambewela & Hall, 2006; Sohail & Shaikh, 2004). In fact, students' satisfaction has been characterized as the "barometer of service quality in education" and for this reason the student-satisfaction approach formulates an ongoing process of assessment, feedback and adjustment of the total student experience, cultivating a trend for continuous quality improvement of the educational services that learning institutions provide. The obsolete yet still widely used student-as-a-product metaphor, which limits the evaluation of the educational

procedure to the sole assessment of the student's cognitive progress, is now challenged by the student-as-a-customer metaphor which stems from the commercial transfer from merely producing goods to producing the goods that consumers would care to buy.

One step further, the application of the client based paradigm in the higher education sector allows students' assessment of service quality to indicate the importance of functional aspects of education. Similar findings from research in vocational education and special vocational education reveal the multilateral aspects of the instructor's competency -such as in relevant curriculum, career assessment procedures, vocational interventions, community resources, and disability knowledge- which determine students' with disability satisfaction. Allowing the student with disability to evaluate the vocational training institutions' services puts empowerment into practice and promotes the effectiveness of vocational training institutions.

## **2. Three education paradigms and hints for evaluation criteria**

### ***2.1. Education with a task: The student as-a-product-paradigm***

In the western society of post-industrialism era, education has been put to the service of the authority dedicated to the high-measured task of enhancing students' skills and knowledge. The utter purpose of the students' knowledge expansion has been to lead them not only to become productive members of the society but also enable them to cover the various societal needs. This long in time and heavy in effort assignment has been undertaken packed with an anything-but-obscure tendency to normalize the student to the societal needs and standards and not vice versa.

In such a framework, student has been given the role of the product of the educational procedure, with any objectification connotations available. Students not fitting easily and successfully their role have been ostracized to the margin of education with courtesy of the stream of medicalization.

The kind of education whose task is to provide objectified students with skills and knowledge that promise the sustainment of the system, requires a sort of evaluation that will ensure the successful fulfillment of such a target. From this point of view, evaluation in education is limited to making use of formalized standardized tests whose scores demonstrate whether students have acquired the knowledge they are expected to attain (McCulloch, 2009; Tight, 2013).

Accordingly, teachers are seen as workers in the service of the educational and societal system with a view to reproducing its assets. Teachers will, then, be pressured to ensure that the "product" of education, the objectified student is of the highest quality. They will find themselves accountable to outside stakeholders, internal and external, such as parents, the wider teaching profession, and public policy, yet without having sustainable and supportive professional learning communities for their professional improvement.

### ***2.2. Education with a target: The student-as-a-consumer paradigm***

At the end of the 20<sup>th</sup> century there has been a shift in the role of the student in the educational procedure from treating the student as a product to treating the student as a consumer. This new trend has been imported as a commercial transfer from the field of industry, where market competition and management consultancy had earlier put the emphasis not merely on producing goods but producing goods that consumers would care to buy. This new concept in the field of education was first and widely applied to the level of college and university studies, as they were mostly of the private sector. Thinking of education in terms of private rather than public goods has built the tendency to run schools less like the temples of knowledge and more like businesses. Schools

welcomed this new era, marketing themselves to be more responsive to customer demands and, ultimately, aiming to expand their customer range.

In this market manipulated framework, evaluation in education is performed in terms of assessing the customer base width (Cardoso, Carvalho, & Santiago, 2011; McMillan & Cheney, 1996; Sven, 2005). Students are the immediate consumers of education as a product, with parents being the final financial decision makers. Therefore it is not clear who the teacher really serves: the school, the student or the parent. A problematic case when there may be incongruence between parent demands and students' best interests in education.

With both students and parents being entitled to tell the teacher what to teach or how to teach, the in-class educational process becomes a game of tactics rather than a game of learning, as evaluation criteria, such as method effectiveness, pre-occupational development, customer delight, attractive costs and time economy are all active simultaneously.

### ***2.3. Education for a cause: The student-as-a-client paradigm***

Perceiving students as clients of educational services helps service quality assessment to highlight the importance of functional aspects of education services. If students are energetic clients with opinions worth taken into consideration, then teachers are service sector professionals, who will cooperate with their clients in order to achieve success rather than attempt to solely please them (LeBlanc & Nguyen, 1997; Mahatmya, Brown, & Johnson, 2014). In the framework that is offered by the student-as-a-client paradigm, teachers and students are all responsible for education and accountable for its proper delivery. As thinking cannot occur unless the individual is actively engaged in the material, in this paradigm students acquire knowledge through personal exploration and not by meeting external demands.

## **3. Service quality**

### ***3.1. Service quality business-wise***

Among various definitions of service quality, a broadly accepted one would describe service quality as the performance of the service that a service provider offers, as perceived by the service receiver (Brady & Cronin, 2001; Parasuraman, Zeithaml, Berry, 1988; 1985). The relation between service quality and client satisfaction is commonly accepted with the emphasis shifting from one to another. Some researchers perceive the quality of services as a precedent to satisfaction (Spreng & McKoy, 1996), while others conclude that satisfaction of recipients of services is a precedent to the perceived quality of services (Aldridge & Rowley, 1998; Arambewela & Hall, 2006).

### ***3.2. Service quality education-wise***

The trend of evaluating service quality as perceived by students as clients in the field of education has been already followed in the ranks of university and college education, technical and vocational training and secondary education, while both parents and students viewed themselves as stakeholders. Among the psychologically central aspects of education that students have pointed out, some of the most frequently found by research are: physical facilities, training equipment, security, management, responsiveness, empathy, learning outcomes, academics, instructor, personal development (Abdullah, 2006; Douglas, Douglas, & Barnes, 2006; Ibrahim, Rahman, & Yasin, 2014; Khalifa, 2009; Mahapatra & Khan, 2007; Navarro, Iglesias, Torres,

2005; Senthilkumar & Arulraj, 2011; Ramseook-Munhurrun, Naidoo, & Nundlall, 2010).

Findings from research conducted in the field of special vocational education, approaching students with disability as service recipients, indicate the importance of factors, such as physical facilities, security, responsiveness, reliability, competence, access, empowerment, humanness, communication and job seeking preparation (Vaughan & Shiu, 2000). Involving the student with disability in the evaluation of the vocational training institutions' services, while fulfilling the role of the student with disability as a client, features Dewey's (1949) principle for student engagement and responsibility for education.

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## **9.2. E-mentoring: Experimental application of a modern model of support to students in the preparation, design and implementation of practical training**

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### **Abstract**

*The present study was motivated by the attempts for a more effective practical training to present the data collected through questionnaires when the experimental application of the e-mentoring model took place to support the students of the University of Thessaly, Department of Early Childhood Education during their last academic year (2014 – 2015). The pre-graduate students had all the simultaneous support from the e-mentors in order to prepare, design and finally implement their practical training. The research results, which are still under elaboration, highlight issues related to the improvement of apprenticeship and emerge the importance of e-mentoring in initial teacher education.*

**Key-words:** E-mentoring, pre-service teacher education, Mentor, practical training

### **1. Introduction**

The Practical Training of the students in Early Childhood Education Departments is meant to be the connection between theory and practice and the professional view of the job to the prospective teachers in order to recognize their difficulties and improve themselves (Taratori, 1996). Therefore, Practical Training is one of the most important components in teacher's education.

Following the review of international and Greek literature we realize that there are different trends in teaching education. We notice differences in educational structures, types of schools, types of educators, organization and initial training programs, types of professional development of students, even within countries, making any comparisons difficult (Eurydice, 2013).

The most recent course catalogues of Greek Pedagogical Departments focused on the Reflective Teaching Model. That model suggests that the teacher should be an active participant and not a passive one in the educational procedure and act as a researcher. The Pedagogical Departments are in a constant need of finding effective ways to reach the model of the reflective teacher; therefore, there is a net among them on Practical training. This model can be implemented only when prospective teachers act in real conditions under the supportive guidance of an experienced active teacher (Wood & Eicher, 1989), who is generally called Mentor and creates opportunities for active and reflective attitude towards learning. The sooner the student cooperates with the mentor, the more effective he can be in the designing of the thematic approaches, in class management, in the cooperation between parents and teachers, in critical thinking and reflection. It's a crucial interaction between the mentor and the future teacher.

Studying the review of literature and the current changes in the academic fields we come across with the "Triad" model (Clarke, 2001), which has as a common component: the assignment from the university of the student's supervisor in a responsible supervisor and the partner class teacher (cooperating teacher) in the role of mentor (Clarke, 2001; Gregoriadis & Birbili, 2009). According to this model, students work together in pairs for several weeks near a cooperating teacher. The university professor fully supervises all the procedure (Clarke, 2001). This model is based on the view that the future teacher is better prepared when he experiences the pedagogical practice in real conditions under the supportive guidance of an experienced teacher (Wood & Eicher, 1989).

Many researchers have pointed out that mentoring has many positive effects on future teachers (Feiman - Nemser, 1996; Ingersoll & Kralik, 2004). If we attempt to describe some of the student's benefits of this relationship, mostly described in the literature, it seems that the first contact with the teaching profession is provided with psychological support (Feiman - Nemser, 1983). The first attempts with the teaching profession should be fully supportive (Feiman - Nemser, 1983; Russell & Russell, 2011). Additionally, the provided tutorial support, which is given by the mentors, helps the newly appointed teachers to decide what and how to teach, manage the class and develop their own strategies (Boren, Johnson, Nidey & Potts, 2009). Finally, professional support is provided in the sense of a smooth integration in the teaching profession with the aim of helping teachers gradually familiarize themselves with the "practical knowledge" (Schön, 1983), which is acquired through daily practice. To conclude, the mentoric relationship (mentoring) should be approached as a set of cooperative actions, which lead mentors and novice teachers to a dialectical relationship, from which both benefit (Feiman - Nemser, 1983). According to Schön (1983), the new teacher is constructed during this interaction.

Seconded teachers used to undertake the role of the mentor in Greece, but those who are involved in the practical training in the Pedagogical Departments know that the selection of seconded teachers depends on various criteria. Sometimes, the term is short and, thus, there is no formal training for them (Gregoriadis & Birbili, 2009). Furthermore, there is an expectation, often a requirement, while these teachers are trained for another level of education, to be trusted with the initiation of future teachers with no preparation for this very different role (Gregoriadis & Birbili, 2009). In addition, there are no clear and specific descriptions for the role of seconded teachers (Gregoriadis & Birbili, 2009), because the universities perform multi task. Finally, the disproportionately small number of seconded teachers should be mentioned, as opposed

to the large number of students, which does not contribute to the improvement of the situation.

All the above lead to the conclusion that it is very difficult to achieve the effective and efficient implementation of the mentor's role. In this perspective, we could add an alternative approach to mentoring, especially for cases that cannot be applied a classical dimension of mentoring. It is the case of e-mentoring (Telementoring, Cyber Mentoring, Virtual Mentoring), which has been applied to some universities internationally.

E-mentoring is defined as the communication between the student and the mentor, through computer use, such as e-mail, chat rooms (blogs, Web conferencing), social media and other solutions based on the internet changing the way mentors and students interact (Jaffe, Moir, Swanson, & Wheeler, 2006). Jaffe and his associates (2006) identify e-mentoring as the relationship between an experienced (mentor) and a less experienced or inexperienced (student) that communicate mainly through computer. Single and Mueller (2001) defined e-mentoring as "the relationship that is established between a more senior individual (mentor) and a less skilled or experienced individual (protégé), primarily using electronic communications, and that is intended to develop and grow the skills, knowledge, confidence, and cultural understanding of the protégé to help him or her succeed, while also assisting in the development of the mentor" (p. 108). Through this relationship which is designed to develop and improve student's knowledge and skills, as well as creating a sense of security and confidence, students understand the educational culture and efficiently introduce themselves into the teaching profession (Jaffe et al., 2006). According to research data, the technique of e-mentoring is a supportive and auxiliary dimension of provision to students, which helps them gain time, as there is not a direct contact between the mentor and student (Jaffe et. al., 2006). Such a perspective which is accessible through e-mentoring must be further examined if that could be a solution to facilitate the implementation of practical training in Pedagogical Departments.

The necessity to ensure high quality education in the initial training programs for school teachers is now one of the main goals of those who are involved in education, a condition which is directly related to continuous professional development (Eurydice, 2013).

## **2. Method**

According to the model explained in the introduction and the questions that have been created, the aim of the study was to detect the implementation of the e-mentoring in Practical Training emphasizing on the reflective teacher's model.

More specifically, the targets of the study based on the principals of e-mentoring described above were the following:

- The prospective teachers should be supported psychologically, didactically, professionally, reflectively and collaboratively through e-mentoring and in order to feel competent.
- Reflection through e-mentoring should be promoted.
- The mentor's role should be brought out and reinforced as the reflective teacher's substantial ingredient.

### **2.1. Procedure**

Taking into consideration all the issues about the choice of seconded teachers in Practical Training, the best perspective seemed the one that had two appointed teachers already working in public schools in Volos. A few but necessary adjustments were

taken into consideration, such as the curriculum, the supportive team and the schools involved in Practical Training so that the model could be operational and effective in the Department of Early Childhood Education, University of Thessaly.

The Practical Training of the 7<sup>th</sup> and 8<sup>th</sup> semester in our Department is the last but the most demanding stage in the students' education. For the needs of the study, the students in the 7<sup>th</sup> semester designed their thematic approaches in pairs and received two sessions of feedback by two mentors. Each mentor communicated with 75 students in pairs and assessed them only through e-mentoring. In the 8<sup>th</sup> semester the students took over all the educational procedure and implemented their Practical Training in a real class in the public schools of Volos in pairs for six weeks!

## **2.2. Measures & participants**

Students' perceptions about e-mentoring were measured by scores on an Anonymous 56-item questionnaire especially formed in Google Forms for the needs of the present study. The students ( $N=82$ ), 50% participated voluntarily out of the 175 students in total) chose their preferable answer in the first 50 close questions in a 5-item Likert scale (from 1=negative to 5=positive) and in the end they had the opportunity to analyze the last six open questions.

The questions were grouped in five categories-variables that are exactly the criteria of the mentoric relation: Psychological support, pedagogical support, professional support, cooperative skills and reflective teaching, randomly placed in the questionnaire. Each variable was checked by at least five questions. In order to reassure the reliability of the questionnaire most of the questions were checked twice by other negative questions with the same meaning. These negative questions should be marked with minor prices than 2,5. All the prices from 2,5 to 5 were characterized positive and all the prices minor 2,5 were characterized negative.

## **2.3. Duration**

The Google Form was open from April 22<sup>nd</sup> 2015 till the end of the 8<sup>th</sup> semester in June, 2015.

## **3. Results**

The results were analyzed qualitatively and quantitatively in agreement with the study's variables. The quantitative data were taken from the first 50 close questions and the quality data from the last six open questions at the end of the questionnaire. The content analysis was accomplished with NVivo, the well known qualitative data analysis computer software package. All the variables were assessed positively.

Referring to the psychological support, the quantitative data (see figure 1 below) conclude that the mean price of the variable is 3,54 which is clearly placed in the positive side of the scale. The qualitative analysis also shows that the students were supported psychologically by the mentor and they finally felt confident in their teaching skills (e.g., "The mentor helped me to trust myself and become confident in managing the class").

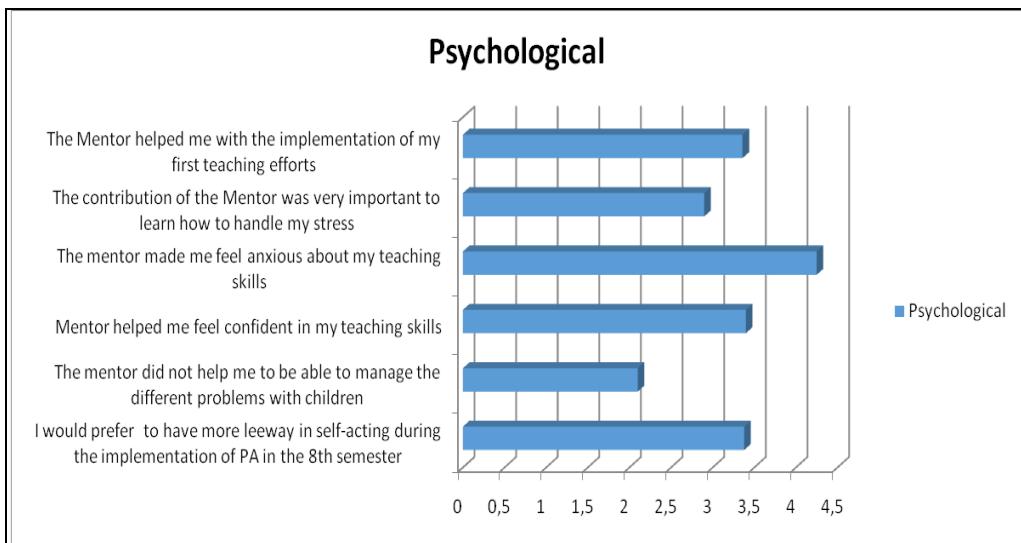


Figure 2: Quantitative data in reference with the mentors' psychological support to students

As for the didactical support during the 7<sup>th</sup> semester, figure 2 below ( $M=3,43$ ) and the content analysis (65/67 references) indicate that the mentor suggested innovative and contemporary teaching methods and helped the students design the thematical approaches according to what they had been taught at university (e.g., “She helped us apply the instructional plan with innovative and interesting ideas”).

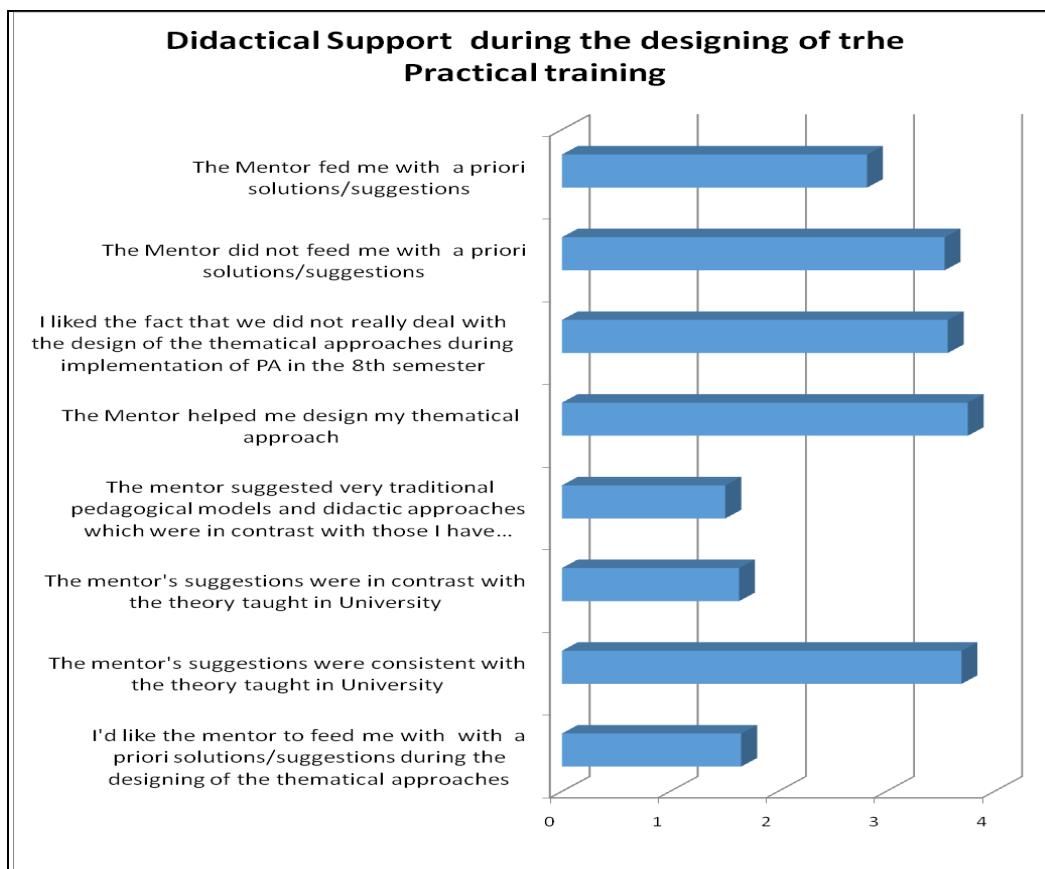


Figure 2: Quantitative data in reference with the mentors' didactical support to students during the 7<sup>th</sup> semester

Referring to the didactical support during the 8<sup>th</sup> semester, the quantitative data ( $M=3,40$ ), (see chart 3 below) and the content analysis (65/67 references) indicate the mentor's positive contribution in the implementation of the students' P.T (e.g. "It was quite positive that she provided constructive support during the P. T.").

Chart 4 clearly also shows that all the prices are in the positive part of the scale ( $M=3,39$ ) for the professional support. There were 13/67 references about the mentor's precise recommendations about their professional future. Some students mentioned: (e.g. "It is very helpful that she is an active teacher as well. She offered a different perspective of teaching into the actual context of greek kindergarten classes").

In the same way, the mentor encouraged the collaboration between the students (chart 5).

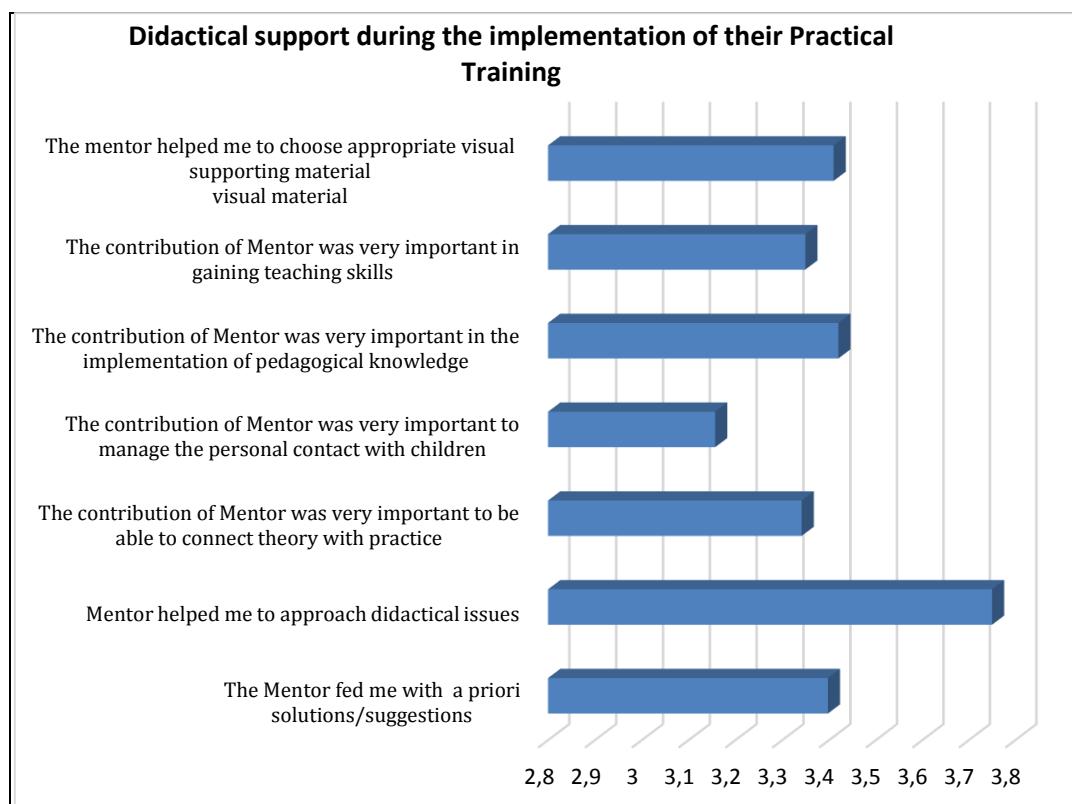


Figure 3: Quantitative data in reference with the mentors' didactical support to students during the 8<sup>th</sup> semester

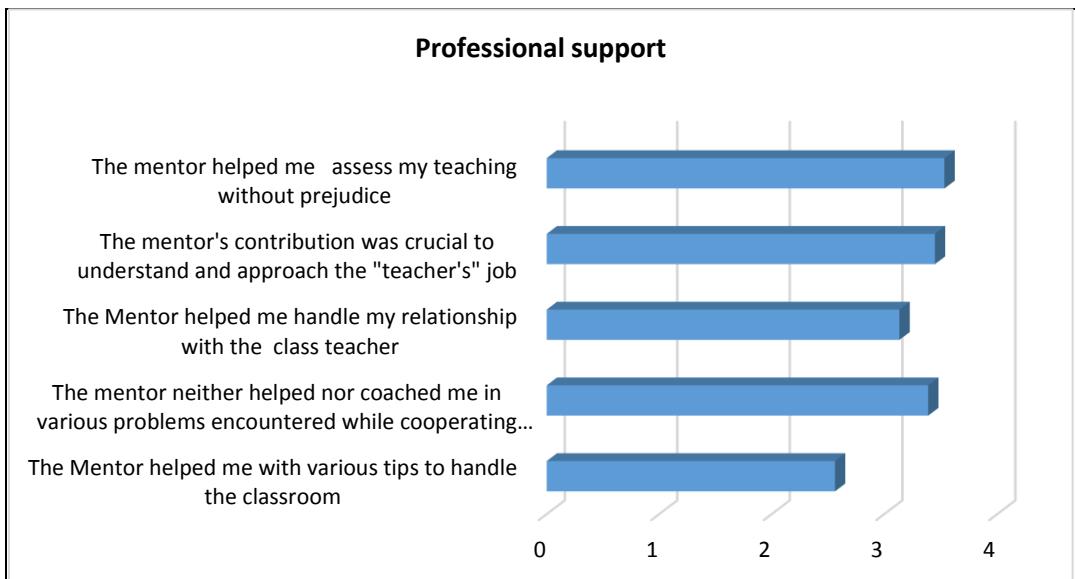


Figure 4: Quantitative data in reference with the mentors' professional support to students

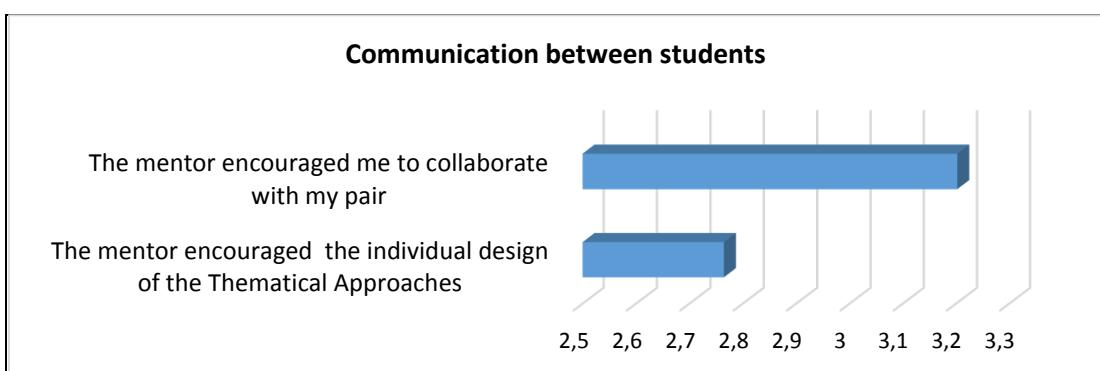


Figure 5: Quantitative data in reference with the communication between the students

The communication – collaboration between the mentor and the students was examined in various ways. Firstly, the students evaluate their communication with the mentor (see figure 6) with the highest price of 4,04, whereas all the variables have ( $M=3,48$ ), which is very positive (e.g., “We communicated really well. She helped and encouraged us”). Though it is significant to mention that the majority of the students prefer both types of communication, visually and electronically.

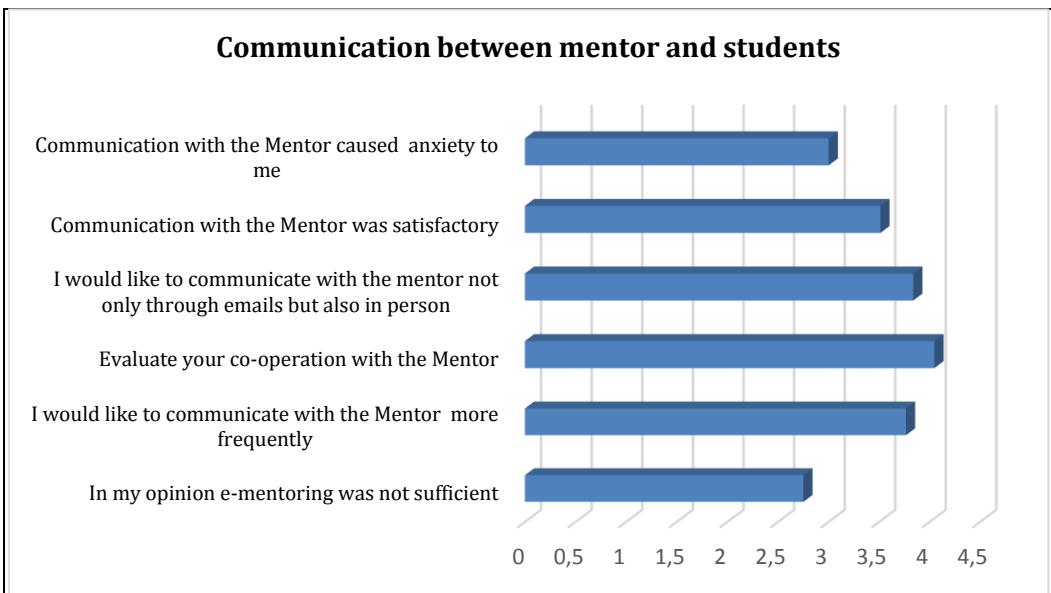


Figure 6: Quantitative data in reference with the communication between the mentor and the students

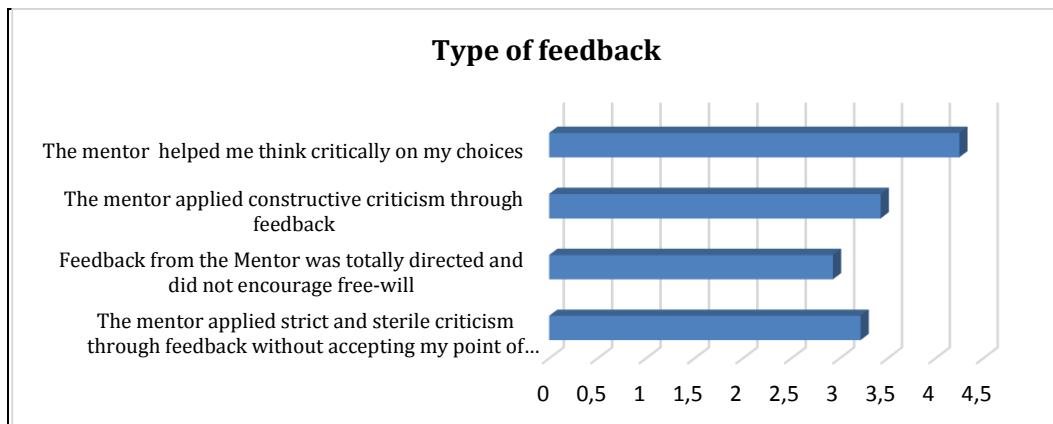


Figure 7: Quantitative data in reference with the type of feedback the students received

Referring to the collaboration during the 7<sup>th</sup> semester, the students evaluate the mentor's feedback positively ( $M=3,61$ ), as figure 7 above shows; at the same time, 65/67 references mention that the feedback was very constructive while the time between the two sessions of feedback was not sufficient enough (see figure 8) even though the mean price of the variable is slightly positive (e.g., "I would like a different communication manner. It was not helpful to contact only via e-mail, since the responses were usually delayed.").

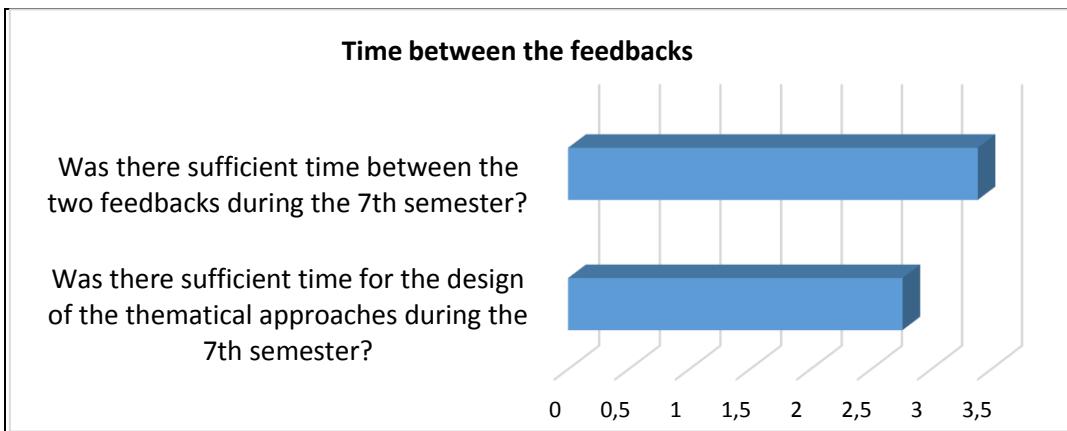


Figure 8: Quantitative data in reference with the time between the two feedbacks

The last variable was about reflective teaching. It was an ambiguous issue to students. The results indicate the misunderstanding for the role of the reflective teacher among the students. The quantitative data (figure 9) show that the students reached the model of the reflective teacher ( $M=3,47$ ) very superficially, while the content analysis proved that only 33/72 managed to reach the model through their comments (e.g., "...I observed the children's interactions, the way they are thinking and I reflected upon them, in order to adjust my teaching practices..") Moreover, they evaluate the diary positively (e.g., "...through the diary we had the chance to reflect...in making our instruction better").

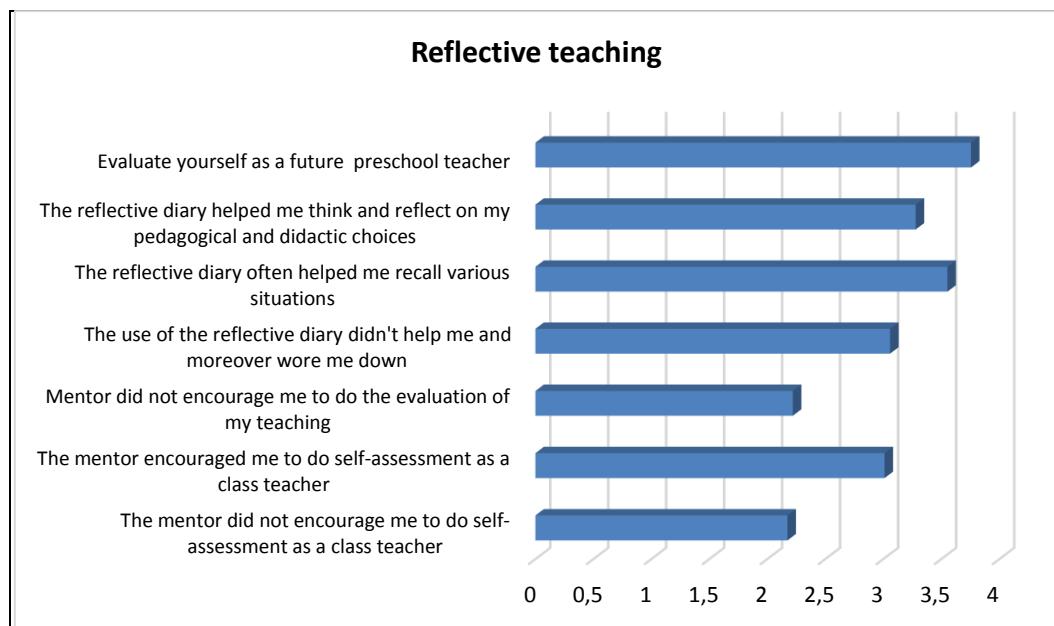


Figure 9: Quantitative data in reference with reflective teaching

In total, there is a wide acceptance of e-mentoring (see figure 10) with an encouraging mean price ( $M=3,5$ ) (e.g., "I would not change a thing! The cooperation with the mentor was very satisfying and the feedback helped a lot."). They are also satisfied with the pattern of the Practical Training using the e-mentoring model ( $M=3,5$ ) (e.g., "The Practical Training really introduced me in thinking and reflective process").

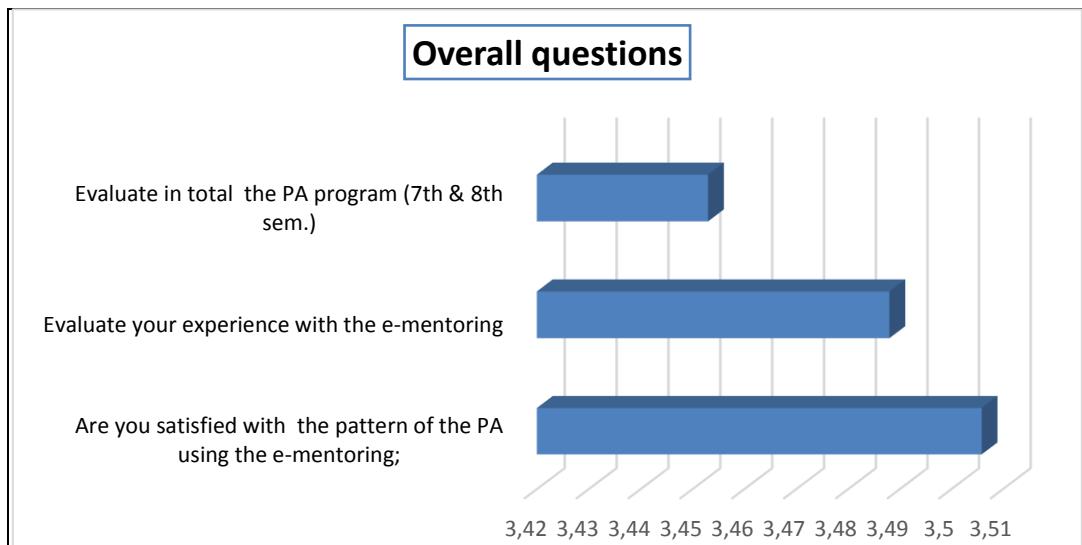


Figure 10: Quantitative data in reference with the model of e-mentoring in Practical Training

#### 4. Discussion

This study re-enforced prospective teachers psychologically, didactically, professionally, reflectively and collaboratively. The students' answers show that they were really supported psychologically by the mentor and they regained their trust to their didactical skills during the designing and the implementation of the Practical Training.

The mentors helped the students bridge the gap between theory and practice and provided all the help needed according to new methods and models of teaching not only in the designing but also in the implementation of the Practical Training.

The mentors supported the students professionally, as they helped the students with the daily management of the classroom and improved their communicating skills as teachers.

The collaboration with the mentor through e-mentoring was very satisfactory but the students mention the lack of time between the sessions of feedback in the 7<sup>th</sup> semester, even though they realize that the lack of seconded teachers causes problems in the Practical Training.

This study indicates that e-mentoring during the feedback and the reflective diary promotes the model of "reflective teacher" to the prospective teachers.

However, there are some limitations of the present study that have to be taken into consideration. One of them concerns the sample consisting of 85 out of 150 students. Undoubtedly, it would have been better if we had had more answers.

Another issue that deserves further examination concerns the understanding of the "reflection" approach. Therefore, it could be worthwhile to implement a longitudinal study to examine the "reflection" of these students while teachers in action.

To conclude we suggest that the model of e-mentoring is applicable and effective, which can be expanded to other universities including more mentors.

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### **9.3. Teacher educators, student teachers and quality in Teacher Education**

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#### **Abstract**

The aim of this paper is to examine teacher education (TE) for school teachers in the light of current educational needs and challenges emphasizing a deeper understanding of teacher preparation in higher education. The paper highlights: 1) a theoretical framework of contemporary TE according to which TE is conceived as an identity construction and not as a static event but rather as a process which involves a personal, professional and environmental dimension 2) the emergence of themes from an ongoing study based on interviews with student teachers and teacher educators in a Greek pedagogical department.

**Key-words:** Teacher education, educator, student teacher, quality

#### **1. Introduction**

Socrates (469–399 B.C.), Plato's teacher, the philosopher in ancient Athens, is famous for saying that he knows one thing very well, that is, he knows nothing and that the unexamined life is not worth living. He did not charge anything for his teaching and he chose to abide by the laws, although these laws condemned him to death. He believed that we learn best by asking crucial questions and testing tentative answers against reason. The Socratic Method engaged students in searching truth and wisdom.

Applied to teacher education, nowadays, it seems necessary to stop and reflect on some important questions which might lead us to return to fundamental issues associated with the purpose of teacher education and schooling; perhaps a major lesson we can learn is that teaching is rich and complex and that after learning certain answers, new questions arise. This requires an examination of educational approaches to teacher education from more than one perspective; this may help us to think about what happened, why it happened and what can be done. When problems and dilemmas associated with teaching and learning are articulated and examined in teacher education, it is more likely that teaching and learning will be better understood and valued within higher education and teaching profession.

The agenda for quality reform needs to rethink ways to achieve consensus and a common philosophy for a broad, flexible and values-oriented paradigm in teacher education. Therefore, it may be useful to put critical issues in a broader context regarding the pedagogical patterns, the effective link of theory with practice and the development of teacher identity.

#### **2. Certain issues associated with quality in teacher education**

One complicated issue associated with quality reforms in teacher education is that of the “outcomes question”. Although there is agreement that this question is important, there is still no consensus about how these outcomes should be defined, measured and used in policy and practice decisions (Cochran-Smith, 2004).

Another issue is the existence of a coherent vision for learning and teaching both in schools and teacher education. Developing a shared vision does not come from top-

down mandates, policy or vision statement alone or through the single imposition of a set of standards (Sergiovanni, 2000). Dialogue, democratic approaches in which critical thought is encouraged can lead to a shared, coherent and sustainable vision. Such a shared vision can foster the “capacity to seek, critically assess, and selectively incorporate new ideas and practices” (Fullan, 2001. p. 44).

An interesting and major point is how teacher education curricula can become effective models of professional learning communities that strengthen and nurture professional dialogue and collaboration (Holm & Horn, 2003).

In these communities teachers can participate if they know that they will be given opportunities to create and receive knowledge. Teachers usually appear to become members of a community when they know that they are valued as partners and participants in an ongoing effort to improve the learning process for themselves and their students. This is important when learning communities are trying to bring people together who have different ways of acquiring, developing and using knowledge.

In addition, keeping a balance between inside knowledge (teachers' experiential knowledge) and outside knowledge (knowledge created by research and conceptualization) can be a hallmark in these successful learning communities (Cochran-Smith, 2004).

It is also important to recognize that success and quality in teacher education is related with the teaching practicum which requires true academic culture between TE and schools. The importance of being connected within a wider learning community can be developed when respective roles and responsibilities are defined clearly and both parts adopt sincere dialogue, trust, commitment, co-operation in decision making, empowerment to fulfill common needs and a shared vision. This can result in a school culture of professional inquiry and a supportive structure that allows student teachers to develop their teaching identity and better understand the perceptions and realities of teaching (Carrol, 2006; Haggarty & Postlethwaite, 2012).

The reflective and ethical dimension in teacher education can become crucial elements in the personal and professional development of student teachers and teacher educators.

Through reflection activities they can better understand the complexities associated with teaching and learning, question the status quo, shape their own development, personal growth and awareness, be engaged in self evaluation and self improvement and transform pedagogical beliefs and practices. These can occur during activities in TE, such as journal writing, multimedia cases, video analysis and blogs.

Similarly, an ethical dimension in TE curriculum can provide formal or informal learning opportunities for student teachers and their educators to address complex issues and search for answers both at personal and academic level. This requires dispositions and skills so as to evaluate personal practices effectively (Diez, 2007).

Investigating attitudes and dispositions (through critical cases, narratives, dilemma in school context) is important in TE because they can develop a framework for understanding teaching practice. Teacher preparation is, then, viewed more as a constructive process and a journey of development, growth, imagination and improvisation (Darling-Hammond & Brandford, 2005). Moreover, teacher educators have the opportunity to model moral identity and character and discuss concepts, such as care (the nature of relationships), justice (the ways teachers have to behave), critique (who should control an academic community) and moral commitment (connectedness to others), with their student teachers.

Finally, rethinking the role of teacher educator and student teacher can open up spaces for conversation that allows them to identify the characteristics and qualities of their personal and professional identity within teacher education.

### **3. The study**

The goal of the study is to examine both teacher educators and student teachers beliefs, dispositions and attitudes towards the TE curriculum, their academic experiences, personal expectations and educational vision for TE and the overall impact of TE curriculum on their personal and professional development.

The target population includes student teachers (4th year) in a Greek pedagogical department for primary school teachers as well as their teacher educators.

Concerning methodology, the qualitative analysis of interviews follows the process of modifying categories and statements about particular themes and drawing conclusions by comparing within-case and across-case themes.

### **4. Emerging themes from the study**

Starting to analyze the specific data, several themes were identified in relation to teacher educators and their student teachers, two of which were: a) personal development and 2) the impact of curriculum.

#### ***4.1. Teacher educators and personal development***

Most teacher educators identified life events, image of self and personal attitudes as elements that have influenced their perception of themselves to become educators in higher education. They admitted that within the pedagogical department they were given more opportunities for academic freedom and interpersonal relationships. Most of them understood their role as good service both to society and academic community.

Half of the teacher educators expressed the notion that working in this specific academic environment provided time and space for their personal pursuits. Positive considerations were associated with material benefits of being teacher educator, such as long period of holidays, job security, absence for leave for educational purposes. Nearly half of the teacher educators noted the importance of advancing their research identity in the pedagogical department.

Every teacher educator emphasized the benefits of academic life in this particular context. Among the benefits they valued more were those related to intellectual freedom, flexibility in teaching and choice of research projects.

A few teacher educators appeared to be emotionally isolated, while others related this fact with specific tensions and conflicts with other colleagues. Similarly, a large number of interviews suggested that teacher educators often spend time on tasks that do not count toward their promotion. They stressed the need for more administrative support and more visibility of their research in the department.

#### ***4.2. Teacher educators and TE curriculum***

Nearly all teacher educators claimed that they felt satisfied with the rich variety of courses offered in various disciplines. A common belief among them was that their own discipline had to be valued mostly as the starting point for student teachers' learning.

Some expressed reservations about the imbalance in decision-making concerning the allocation of courses in various disciplines. Teacher educators in specific disciplines expressed their complaints, emphasizing that the pedagogical department sits in an

ivory tower and ignores changes with reference to the school curriculum and didactic adaptations.

Despite the fact that teacher educators appreciated the value of information technology, they maintained that it was mainly used for administrative purposes and announcing the curriculum, changes, examination timetables; even the majority of them claimed that most of the integration of information technology in their courses was restricted to the use of it as a content delivery or as an information presentation tool.

A few teacher educators proposed the systematic use of an electronic platform for eLearning and study skills support. They believed that everyone in the pedagogical department should make use of such a platform, which could promote flexible and interactive group learning and facilitate pedagogy and teaching.

Many teacher educators expressed the notion that the overall structure of the TE curriculum organized the knowledge base through designed courses, a teaching practicum and pedagogies that connect theory and practice.

A significant number of teacher educators recognized that the curriculum should be structured in terms of prerequisites before allowing student teachers to take advanced courses.

The majority of teacher educators consider that due to the increased number of student teachers admitted, the ratio between teacher educator and student teacher had been seriously affected. This caused additional workload for teacher educators, which inevitably affected the quality of teaching and the standard of working conditions.

Teacher educators proposed a maximum number of student teachers to be registered in each course and specific steps to be taken to control student teachers' enrolment in certain courses. In addition to this, teacher educators insisted that the pedagogical department should develop mechanisms to monitor the overall implementation of the curriculum more effectively.

Teacher educators who mentored student teachers appear to agree that effective mentoring includes:

- mentor's personal attributes,
- articulation of pedagogical knowledge,
- modelling teaching practices,
- feedback after practice.

However, many teacher educators articulated the belief that it is necessary for them to learn and develop more particular skills in mentoring. Having greater awareness of the multiple roles they needed to undertake as mentors, teacher educators began to re-frame their practice and look more closely at their teaching in the pedagogical department.

Those teacher educators, who adopted the role of supervisor, explained that supervision was better centered on the developmental aspect of their student teachers and that they could assess them on required tasks using university-based criteria.

Nearly all teacher educators emphasized the difficulties they face during teaching practicum: stress about mentoring approaches, anxiety how to avoid conflicts, increased workload and added responsibility.

#### ***4.3. Student teachers and personal development***

A large number of student teachers referred to a blocked aspirations context that forced them to choose to study in the pedagogical department; this context (the entrance national examination system) prevented them from entering their first choice in another university discipline.

Among the main reasons that influenced student teachers' decision to become teachers were: family, security of job, opportunity to work at school after university graduation, an idealistic ideas for a better society, time compatibility, wealth of interpersonal relationships.

One interesting finding was the student teachers' role model they had in mind choosing the teaching profession; many of them chose teaching as their future job because they identified themselves with the picture of a very good teacher or with the "antithesis picture" of a very bad teacher.

The majority of student teachers noted that they found it difficult to shift from earlier approaches they had experience in school to new ones in the pedagogical department; moreover, they indicated that they became self-motivated and self-directed in their studies.

Some student teachers travelled a learning journey within the department because of intellectual curiosity. When teacher educators motivated them to reflect on their practices and trial alternative academic approaches they felt a sense of self-efficacy and improvement.

Most of them related classroom learning to the real world only during their teaching practicum. An important element that appeared to help them develop their social skills was the cooperation activities with other students in the department.

However, most interviews indicated that student teachers' development was not viewed in a linear fashion. Sometimes, it was considered as a cycle consisting of changes on personal views and attitudes and sometimes as questioning certain established beliefs about learning and teaching.

From their personal history, many student teachers entered the pedagogical department with preconceived ideas and beliefs about learning and teaching. Their resistance to changing pedagogical patterns seems to be a turning point that affects their sense of teacher identity and their emotional experiences.

Student teachers acknowledged that teacher educators who appeared to care about them was a crucial factor for their academic and personal development as prospective teachers; teacher educators were identified as friendly, open-minded, encouraging, enthusiastic and with a sense of humour.

Many student teachers associated their academic development with personal effort and aspirations. They often appreciated peer teaching because this enhanced their reflection.

#### ***4.4. Student teachers and TE curriculum***

Student teachers put in their curriculum more emphasis on their subject-specific matter courses and less emphasis on the methodology courses.

They often felt that were offered a rather simplistic set of techniques and approaches to learning and teaching and that few courses gave them the possibility to develop their abilities as reflective decision makers.

The majority of student teachers indicated that assessments were not used to guiding and informing their learning and teaching. They mentioned an absence of constructive feedback; however, most of student teachers were forming their own vision of good teaching and expressed the view that their participation in major revisions of the curriculum should be encouraged.

Although they found an unequal distribution of subjects in different disciplines, student teachers found it challenging that they could structure an individualised programme with compulsory choice and elective courses.

Nearly all student teachers acknowledged that the teaching practicum was a unique environment for them to increase their self efficacy and their academic performance but certain adjustments are necessary to take place. The teacher educator's role as assessor in their practicum was a fact that student teachers understood as the main source of tension or distrust.

Student teachers who felt that they were not successful during their teaching practicum admitted that this happened mainly because they just skimmed the surface of teaching or made judgements based on superficial observations on pupils' needs and behaviour or had limited discussions with their teacher educators.

Student teachers mentioned that they felt like real teachers, confident about their teaching when their relationships with their mentors were collaborative and built on trust, interest and respect. As a result, during their teaching in class they appreciated a shared understanding of effective practices with their teacher educators.

Student teachers expressed the need to disclose misunderstandings and misconceptions about teaching, learning and teacher education. They asked for more authentic academical opportunities and emotional support by their teacher educators.

Student teachers seem to share common concerns about obstacles that hindered their learning. One example was a small negative ecological context within the pedagogical department (some unhelpful and disorganized teacher educators, monotonous lectures, frequent homework and examinations, a large number of courses).

An interesting and surprising finding was the fact that student teachers were sincere enough to reveal that additional complexity to their studies was created by themselves (unexpected personal issues, poor study skills, procrastination). Student teachers indicated that they did not like to study their courses during their holidays; instead, they gave priority to their social interactions and entertainment.

## **5. Some general conclusions**

A first analysis of the interviews suggests that through increased communication, collaboration and healthy relationships, the pedagogical department can evolve into a caring, learning, supportive academic community. Common themes that emerged across the interviews so far revealed that:

- the teacher education curriculum cannot expect to be effective until it works with beliefs and expectations that guide participants' actions and examine the principles underlying the choices that they make,

- reflection and dialogue within the pedagogical department have a significant impact on teacher educators and their student teachers,

- clearly defined outcomes should be used to judge and ensure the overall quality of the curriculum,

- not only teacher educators but also student teachers change personally, socially and intellectually,

- the professional identity of teacher educators and student teachers is better understood as a process of changing.

Further analysis of the interviews is expected to take place and provide evidence for priorities, improvements and adjustments in the curriculum of the pedagogical department, while a useful framework for understanding and interpreting the views, the dispositions and the expectations of teacher educators and their student teachers is needed.

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## **9.4. Elementary teachers' attitudes and perceptions regarding the teaching of fractional numbers**

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### **Abstract**

*The main objective of this research was to investigate teachers' perceptions about the teaching of fractional numbers. Furthermore, it examined whether teachers are aware of the difficulties that students confront while learning and using fractional numbers. Teachers' practices to teach fractional numbers were also investigated. The data were collected from personal interviews with primary teachers. Results have shown that teachers were well aware of the difficulties students experience. Additionally, they believed that they have acquired experience and knowledge of the teaching of fractions. However, they were willing to receive additional training about new methods of teaching fractional numbers.*

**Key-words:** Primary teachers' knowledge, perceptions, teaching fractions

### **1. Theoretical framework**

Fractional numbers consistently cause difficulties among students of all ages. In this research, we intended to examine the situation in primary education. Primary students are not able to conceive the sense of a fractional number (Stafylidou & Vosniadou, 2004). The majority of students are not able to fully understand the concept of fractions and consider the numerator and the denominator as two separate numbers. The difficulties are reflected mostly on written algorithms with fractions (Van de Walle, 2007). The main cause of these difficulties is the fact that fractional numbers are not familiar to children, whereas whole numbers are commonly used in their everyday life (Hasemann, 1981).

Additionally, teachers usually face difficulties with fractions and are not able to teach this type of numbers efficiently (Lemonidis, Tsakiridou, & Meliopoulou, 2015; Tobias, 2013). It has been observed that teachers experience difficulties using models to represent fractional numbers (Tobias, 2013). Consequently, difficulties in fractions are not only a result of the lack of understanding but can be caused by the provided teaching (Clarke & Roche, 2009).

As a consequence, student achievement can be affected by teachers' knowledge. Thus, it is significant for teachers to acquire understanding and content knowledge concerning mathematical concepts, especially fractions (LeSage, 2012; Hill, Rowan, & Ball, 2005).

### **2. Research questions**

The questions posed in this study are the following:

1. Which are the teachers' conceptions about students' difficulties in fractional numbers?

2. Which is the teachers' content knowledge (CK) and pedagogical content knowledge (PCK)?
3. Which are the teachers' practices, perceptions and attitudes regarding the teaching of fractional numbers?

### **3. Methodology**

#### **3.1. Participants**

Eight experienced in-service elementary teachers participated (T1, T2, T3, T4, T5, T6, T7, T8). Personal interviews have been conducted with each one of the teachers. Five of them have received in-service training in Information and Communications Technology (ICT). Their average teaching experience is 15 years approximately. All of them have acquired former experience in the teaching of fractions. This is a convenience sampling due to the fact that there has been easy access to the schools of the participants.

#### **3.2. Instrument and data collection**

The research questions have been answered through personal interviews. The interview has been chosen among other research methods due to the fact that the participants were able to elaborate on their opinions, thoughts and concerns while expressing their views during the interview. Additionally, there have been more chances to clarify participants' replies via additional questions (Cohen, Manion, & Morrison, 2000).

The interview was semi-structured and consisted of four fundamental topics. Firstly, the teachers' understanding about students' knowledge and achievement of fractions was requested. Secondly, the teachers were required to describe through several questions their teaching methods and practices, which were applied and considered helpful by them. The third topic reviewed participants' attitudes towards the Greek mathematics curriculum and textbooks. Last but not least, there were questions regarding the conceptions about their self-efficacy and their acquired content knowledge and pedagogical content knowledge necessary in order to teach fractions. All data have been recorded and transcribed.

## **4. Results**

### **4.1. Teachers' conceptions about students' difficulties in fractions**

The participants were asked to refer to the difficulties that students face with fractional numbers in order to investigate the first research question. Seven out of the eight teachers expressed that students frequently miscalculate with fractional numbers. The most common answer of the formerly mentioned participants was that the conversion of unlike denominators to similar constitutes a complicated procedure for students. As a result, students confront difficulties with addition and subtraction, when the denominators are unlike. Furthermore, according to three teachers, students convert unlike denominators on multiplication and division, which is not a necessary procedure. Thus, students fail to understand the concept of fractional numbers. Difficulties in mental calculations with fractions were observed only by one teacher.

The majority of the teachers agreed (six out of eight) that the difficulties are caused due to the fact that fractions cannot be easily understood and conceived. Students do not succeed in realizing what a fractional number represents. One teacher responded that "students are not able to understand the concept of fractions easily, namely the fact that we separate a whole unit in equal parts and take some of them". Five teachers

mentioned that fractional numbers add further difficulties, since they remain a difficult mathematical concept for school-age children.

In addition, half of the participants suggested that fractional numbers may not be common in students' everyday life. Consequently, students may not be familiar with fractions and calculations with fractions and have not formed previous experience with fractional numbers.

Last but not least, two teachers felt that the school textbook of the fifth grade of primary school is inappropriately structured for children. Furthermore, two teachers observed that the amount of aims and objectives for the primary school is rather significant. Hence, students cannot properly develop a sense of fractional numbers.

#### ***4.2. Teachers' statements about their knowledge of fractions***

This section refers to the teachers' estimation about their content knowledge and pedagogical content knowledge. They were asked whether they felt confident enough about their knowledge of fractional numbers. Seven out of the eight considered their knowledge of the theory of fractions to be sufficient enough to teach fractional numbers in primary school. One participant, who felt more unconfident than the others, stated that he has prepared persistently before each lesson.

Except for their content knowledge, participants referred to their pedagogical content knowledge and the type of training they would prefer to receive. Although participants seemed to feel confident and efficient while teaching fractional numbers, they were willing to attend and participate in further training regarding the teaching of fractions. Seven of the teachers proposed a more practical type of training assisting teachers to eliminate students' difficulties. Participants suggested that training should consist of new teaching methods and strategies. Lastly, two of the participants suggested training in mathematical software. As mentioned beforehand, only two participants responded that they incorporate technology into their teaching.

As mentioned previously, the participants were requested to admit if they would need additional training for the fractional numbers. They would like to enrich their pedagogical content knowledge, but not their content knowledge. They replied that any in-service training about the theory of fractional numbers would be unnecessary.

#### ***4.3. Teachers' practices and perceptions regarding the teaching of fractions***

The participants were required to refer to the teaching methods they apply in order to represent fractions and teach them effectively. Five participants insisted on students' drill-and-practice and constant repetition as a means to accomplish understanding and learning. Three teachers responded that they spend more time teaching fractional numbers to counterbalance and eliminate the difficulties. One of these three mentioned that "although the hours of teaching fractions at the first place may seem to be a lot, I am able to save time later on, since students have already succeeded in learning fractions and they are ready to move on to new mathematical concepts".

Three other teachers attempted to link the students' former experience with fractional numbers and the teaching of this type of numbers. Namely, they stated that they introduce the concept of fractions utilizing former experiences and familiar fractional representations. Moreover, the participants either avoid using the school textbook of the fifth grade or alter the sequence of the lessons regarding fractional numbers. Regarding the sequence of the book, one teacher admitted that firstly he endeavors to teach the concept of fractions through everyday life models. "Afterwards, I spend time on equivalent fractions and comparison, addition and subtraction of

fractions with similar denominators, the least common multiple and lastly additions and subtractions with uncommon denominators”.

All of the teachers stated that they are familiar with models and use them constantly while teaching. The most frequent model used by the participants is a piece of blank paper folded twice or three times, since five of the eight participants insisted on using this one. The pieces of the folded paper represent equal parts of a whole item. Apart from this model, a lot of the teachers use realistic, everyday items that are familiar to students. For instance, three teachers responded that they either cut fruit into pieces in the classroom or ask from their students to separate a chocolate bar in smaller parts. Additionally, one of them uses candies. Finally, three teachers replied that they show images or drawings of pizza and cake. Models are used regularly because, according to all of the participants, deeper understanding of fractions can be achieved. Only three of them clarified that models contribute to a more sufficient representation of fractional numbers.

All of the participants expressed that they focus their teaching on rules that students have to apply in order to solve mathematical problems and algorithms with fractions. Only three of them realize that students should develop their own solving strategies with fractions, instead of adhering to rules and procedures. Moreover, it is intriguing that only two of the five participants who received training in digital technology, employ technological means while teaching fractions.

## 5. Discussion

The participants seemed to focus on the difficulties in typical algorithms, common mistakes and false application of rules. The participants would like to acquire further PCK through experiential training about the efficient teaching of fractions. They suggested that training should involve new teaching methods, specific teaching strategies and technology. All of the teachers have positive attitude to further training and suggest training about efficient ways of teaching fractions. The results of the study agree with these of Li and Huang’s (2008) study where most of the participants replied positively regarding their PCK to either teach computations with fractions or representation of fractions (Li & Huang, 2008). The participants estimated that their CK is sufficient. It is assumed that participants’ confidence about their CK is a result of their long-term experience. Teachers stated that they attempt to represent the concept of fractional numbers in an effective way so as to assist their students to conceive the nature of fractional numbers properly. For this aim they frequently use models in their classrooms.

Lastly, it appears that primary teachers’ PCK ought to be reinforced. It has been proved that teachers’ PCK of mathematics has been positively correlated with student achievement, while there is less correlation between the specific CK and student achievement (Hill et al., 2005).

Regarding the limitations of this research, observations of teachers’ lessons should be conducted in order to form a total perspective regarding their practices and methods in the teaching of fractions. Additionally, a high number of elementary teachers should participate in similar research in order to generalize the results and examine the current situation regarding the teaching of fractions.

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## **9.5. Professional identity in Early Childhood Care and Education in Greece: Perspectives of student teachers**

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### **Abstract**

*Using a qualitative methodology, this study attempts to garner personal perspectives and insights into the developing professional identity of the student teachers of the Department of Early Childhood Education of the Alexander Technological Educational Institute in Thessaloniki, the second largest city in Greece. Three groups of student teachers (N=18, 16 women and 2 men) participated in focus groups and discussed issues pertaining to their professional identity. Data from the focus groups are analysed using Interpretative Phenomenological Analysis; they provide insights into the student teachers' views and expectations regarding their professional role and future career.*

**Key-words:** Early Childhood Education, professional identity, student teachers, Greece

### **1. Introduction**

#### **1.1. Professional identity**

Learning to teach is more than just the acquisition of skills and techniques; it refers to the development of teaching identity. In the last decade, teachers' professional identity has emerged as a separate research area (Beijaard, Meijer, & Verloop, 2004).

Teacher identity formation is a combination of past experiences, present activities, and future expectations; it is continuously renegotiated through social interaction. As Beijaard and his colleagues (2004) point out in their comprehensive literature review, "identity is not something one has, but something that develops during one's whole life" (p. 107). Teacher professional identity has been associated with teachers' commitment to the profession.

Recent trends suggest that a growing interest in the thoughts of student teachers (or pre-service teachers) is emerging, while more studies are conducted to explore the identities of future teachers (Lin, 2012; Martel, 2014 in Vuori, 2015). The process of becoming a teacher develops from the pre-service teacher's understanding and construction of personal knowledge, construction of self, and identity development (Connelly & Clandinin, 1999 in Chong, Ling, & Chuan, 2011). Research (Alsup, 2005 in Chong, Ling, and Chuan, 2011; Brouwer & Korthagen, 2005) has indicated that although pre-service teachers' professional identity formation is quite personal, teacher preparation programmes can make a difference.

#### **1.2. Early Childhood Education in Greece**

There are two basic types of early child care and education institutions either within the private or public sector, which are typical of a "divisional system" (split model) that is seen in other countries as well (Eurydice, 2015; Petrogiannis, 2013).

Early childhood education, represented by kindergarten programs (*nipiagogeion*), is the first formal pre-primary educational stage, which provides services for children 4 to 6 years old. Since 2006 this has become compulsory for children aged five and six.

These settings either in the private or the public sector are supervised by the Ministry of Education and exclusively provide educational services. Since 1988 the kindergarten teachers employed by these programs have been graduates from one of the eight university departments of Early Childhood Education in the country.

Early childhood care is represented only by “day care centres”/nurseries (pedikos and/or vrephonipiakos stathmos). The day care centres are run mainly by the private and the public (through municipalities) sector and provide their services (with minor variations) to children between the ages of two months (or seven months for the public sector nurseries) and up to five years old. Nurseries traditionally offer custodial care with some education services. Depending on the case their supervision comes under the Ministry of Interior (the municipalities’ centres), Health and Welfare (concerning the licensing of the private day care centres) or the Ministry of Education (for the case of licensing of the kindergarten classes). Nurseries have mixed educational personnel; Early childhood teachers are typically graduates of one of the three relevant departments of Higher Technological Institutes around the country, whereas assistants normally hold a post-secondary education college diploma following a two-year training course.

### ***1.3. Reason for research***

In the past five years, many changes took place in the sector of Early Childhood Education in Greece, including the renaming by the Greek Ministry of Education of the “Departments of Early Childhood Care and Education” of the Technological Educational Institutions into “Departments of Early Childhood Education” in 2013 and the increase in staff’s working hours in Infant/Child Centres from six to eight hours per day.

These changes along with the economic crisis, the growing global interest in Early Childhood Education, and the “schoolification of the Early Years” (Van Laere, Peeters, & Vandenbroek, 2012) appear to have had an impact on future Early Childhood teachers, especially on their professional identity. This is a topic that has yet to be explored in Greece.

## **3. The study**

### ***3.1. Aim of the study***

The main objective of this study was to garner personal perspectives and insights into the developing professional identity of student teachers of the Department of Early Childhood Education in Alexander Technological Educational Institute of Thessaloniki, the second largest Technological Educational Institute in Greece.

The Department of Early Childhood Education resides in the School of Health and Medical Care. It was established and became operational in 1985. In October 2013, the Department had a student body of approximately 777 undergraduates enrolled.

### ***3.2. Participants***

Eighteen students (16 female and 2 male) participated in the study. Table 1 provides the demographic information of the participating students.

**Table 1**  
*Participants' Demographic Information*

	<i>N &amp; gender</i>	<i>Age</i>	<i>Year of studies</i>
<i>1<sup>st</sup> group</i>	4 women	18-19	1 <sup>st</sup>
<i>2<sup>nd</sup> group</i>	2 women	19	2 <sup>nd</sup>
	1 woman-2 men	21-35	3 <sup>rd</sup>
<i>3<sup>rd</sup> group</i>	8 women	21-23	4 <sup>th</sup> (just before their six-month practicum)

### **3.3. Method**

*Focus group interviews* were used to explore how these student teachers' points of view were constructed and expressed in terms of issues pertaining to their professional identity shaped by past and present experiences, personal beliefs, expectations for the future and career plans.

Interpretative Phenomenological Analysis was chosen as the most appropriate method to analyse the data, as it allows a detailed exploration of participants' views on the topic under investigation and making sense of their personal world through a process of interpretative activity (Smith & Osborn, 2003).

## **4. Results**

### **4.1. The Care-Education divide: What do young children need?**

Participants' views of the Early Childhood profession reflect the persistent divide between education and care, a finding supported by other studies (van Leare et al., 2012), even in countries that have integrated these in one system (e.g., the Nordic countries).

“ (...) Vrefonipiokomia (the former title of the Department) essentially indicates just *care*; that is, how you will take care of a child, how you will change, how you will behave when the child changes, but the point is that it is *education*, you also teach the child things. In essence, you build the child's character, you have to pay attention to the child's feelings and reactions so that you can react accordingly and there must be an interaction... it's *not just care*.”

--female student, 1<sup>st</sup> year

Student teachers often describe their role both as caring and educational. However, they continuously construct a hierarchy between education and care, with education being restricted to learning and care being subordinate or even inferior to learning.

“Because they said, ‘Well, what do you do? You *play* with the babies, you give them a couple of toys, you put them to bed, you wake them up. OK, everybody can do those things’. It doesn't give you a specialty...”

--female student, 4<sup>th</sup> year

“(We are) basically *pedagogues*. Not teachers because we don't have this strict thing that teachers have... to teach... to provide *pure knowledge*.”

--female student, 4<sup>th</sup> year

Care is presented as part of their role, but not as the most significant one. It is viewed as age-related, a 'necessary evil', as von Laere and his colleagues (2012) call it, which only very young children need. The older children get the more they need to enter the world of learning. This fits the context of increasing schoolification of Early Childhood Education, as preschools from three to six year olds are perceived as preparing them for learning in compulsory schooling (Urban, 2012).

“...supposedly our filed, our occupation starts from 0 up to the age of 5, so based on the fact that children's needs for physical care stop around 2.5, between 3 and 5

years children's education is very important... and I believe that this is rather more important than the daily care..."

--male student, 3<sup>rd</sup> year

However, their views appear 'confused' as they are not sure what their actual role is or should be. This confusion is exacerbated by the recent changes in the title of their Department from which 'Care' was removed. Some students consider this change to be a positive development, as it offers them more prestige.

Others claim that this change is unfair to them, because it strips them of the only skill that makes them different from university-educated Early Childhood teachers. In the future, this may cost them their job.

"Early Childhood education...gives you prestige, status... sounds better..."

--female student, 4<sup>th</sup> year

"It is bad because I believe that as a 'Vrefonipiokomos' (Infant and Toddler minder) I'm in a special field in which 'Nipiagogoi' (early childhood teachers) cannot get. Based on that... I'm *at an advantage* in a day care centre and I think that somebody from a university department cannot get in my field because *they don't know certain things...*"

--male student, 3<sup>rd</sup> year

It is worth noting that the issue of titles and how people in the workplace are named is not simply a matter of semantics. There is power and status that comes with titles (Gibson, 2013).

#### **4.2. A gendered profession: Do women do it naturally?**

This hierarchy between education and care is preserved by the gendered nature of the profession, which is a major issue for participants. Care is seen by many as a simple matter that requires no specific training or professional development as mothers have been doing it for centuries without any special knowledge or skills (Jónsdóttir, 2012; von Laere et al., 2012).

"...I was told, 'OK, big deal! What do you do? How do mothers raise children? Big deal! It's not a profession but something that everybody can do...'"

--female student, 1<sup>st</sup> year

Care is seen as taking care of the physical and emotional needs of the child (food, sleep, toilet), which are presented as being fundamentally different from intellectual needs. This has serious implications, though, as it leads to a narrow view of education as mostly cognitive development; this, in turn, leads to a lack of continuity in the child's care and education perpetuating the care-education divide.

Student teachers also talk about family and friends' reactions to their field of studies, which appear quite different when it comes to gender; for women, it is the perfect job but for men it may be indicative of "less masculinity".

"What irritates me very much is that in general, grown-ups... say, 'ah, *the perfect job for a woman!*' ... What? Because I might have kids at one point, I will look after my children better?..."

--female student, 2<sup>nd</sup> year

"...my father said, 'eh, well, you're going to *this* school?... And my friends in the beginning, of course, they were making fun of me because it's a feminine school for Greek standards..."

--male student, 3<sup>rd</sup> year

However, they themselves do not appear immune or free from such a stereotypical view of their professions as these excerpts show.

“And I believe that it (the profession) will contribute to the *future maternal affection*. It will prepare us for this part as well, beyond teaching, as personalities.”

--female student, 1<sup>st</sup> year

“...they (teachers at the day care centre) treated me very well but because they saw that *as a man I had more strength*, more energy, I remember, they brought two chairs out in the yard and I was running around with 40 kids...”

--male student, 3<sup>rd</sup> year

#### **4.3. The Early Childhood professional: More than a carer, but what?**

The gendered view of the profession, which contributes to the perpetuation of the care-education divide, appears to influence the image of the Early Childhood professional that student teachers construct.

When describing the ‘good’ Early Childhood professional, they place strong emphasis on relational characteristics: patient, caring, loving, creative, empathetic. They attribute these characteristics to themselves as well and if they do not possess them, they question their ability to make it in this field (Garvis et al., 2011).

“...in general I didn’t want it, because I’m *irritable* so I say I won’t be able to stand it...”

--female student, 4<sup>th</sup> year

This emphasis on the ‘right’ personality characteristics that an Early Childhood professional should have is also implied in the reasons they provide for choosing this profession: many participants talk about an inclination to young children or a desire to work with them due to their great love for children. Others found themselves in this field by accident and either liked it after getting in touch with the children or plan to further their studies in their first field of choice (psychology or special education).

“Since I can remember myself, they actually asked me when I was very little... ‘what are you going to be when you grow up’ ... and I said ‘I will take care of babies’...”

--female student, 4<sup>th</sup> year

This view of the Early Childhood professional has been described in the literature as a ‘romanticised’ view of Early Childhood Education, which can be quite simplistic and can undervalue the importance of the pedagogical dimension of the job (Moss, 2006; Osgood, 2006). Specialised knowledge and skills take a second place in participants’ discourse and when mentioned, emphasis is on practical knowledge, creativity – which is described as doing art-related activities -, and the use of play.

“... in my opinion, a good Early Childhood professional must consciously bare the *burden* that this process has for this particular age because the education that the child - being at this very sensitive age - will receive, will follow the child for *the rest of his/her life* and up to a point will then follow the whole society because we are the society. This means that (the Early Childhood professional) must realise and bare the burden of this responsibility because s/he manages up to a point the *future of each country*.”

--male student, 3<sup>rd</sup> year

At the same time, student teachers try to reinforce the importance of their profession by pointing out the significance of the Early Years education.

“I don’t think that I’m fully trained but this the reason why I’m here. To acquire all the *necessary knowledge and practice* that I will need. Eh, nevertheless, because I have *a good relationship with kids* and I deal with various situations everyday, I see that I don’t have particular problems so...”

--female student, 1<sup>st</sup> year

This view reflects the discourse of neuroscience/brain research regarding critical periods and is used to assign power to the field of early childhood education (including care). Other studies have showed that Early Childhood teachers often use these arguments in their discourses to validate their work and to produce identities worthy of high status (Gibson, 2013).

## 5. Conclusions and implications

Student teachers appeared quite unsure about her role; more specifically, they were not sure whether to emphasize the caring or the educational part of their role.

A romanticized stereotypical view influenced by societal views and expectations regarding young children was also presented by participants' views. In general, Early Childhood teachers, as a female profession, are simply less likely to be seen as professionals because of their gender and seem to have to fight for their acknowledgement as a professional workforce. Student teachers themselves placed emphasis on personality and relational characteristics of the Early Childhood professional, while ignoring at the same time the more technical part of the job (knowledge and skills, that is, competence). This may undervalue the educational dimension of their profession. Osgood (2006) argues that an ethic of care and emotional labour are cornerstones to early childhood practitioners' understanding of themselves and that these qualities are denigrated in dominant discourses of professionalism.

More studies (especially longitudinal ones) on Early Childhood teachers' professional identity, which will involve all stakeholders (teachers, parents, students, administrators, and policy makers) are needed. We also need to start looking into integrating care and education at an institutional and national level and, most importantly, we need to implement a holistic view of education which will be negotiated with all stakeholders. Rather than focus on academic skills, which will prepare children for school, the education must be seen as a broad preparation for life.

The idealized, romanticised view of Early Childhood Education must be challenged in teacher education programs to help improve and support future early years teachers. Reflexivity needs to be incorporated in early childhood teacher education programs. To be reflexive encourages critique, reflection and questioning of dominant discourses, which, in turn, leads us to acknowledge that education is inevitably political and value-based; we need to continuously question, debate, invent and re-invent education, as it was suggested by Paulo Freire (1997).

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## **9.6. Encouraging pre-service teachers to reflect on their teaching during practicum**

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### **Abstract**

*The importance of reflection in learning has been emphasized in the context of many professional education programs. Reflection may support the analysis of personal assumptions related to certain issues and the planning of future actions that can change and improve teaching. The present study examines the concerns of pre-service teachers' related to practicum and the form of critical reflection they develop. Data collection mainly involved the examination of reports written individually by pre-service teachers. Implications of the research findings to enhance reflective thinking in practicum courses are discussed.*

**Key-words:** Reflection, practicum, initial teacher education, early years education

### **1. Introduction**

During the past decades the importance of educating reflective practitioners is especially valued in teacher education programs. The concept of reflection, however, has a number of definitions and is updated by a wide range of theoretical and philosophical orientations (Lee, 2005; Nolan, 2008; Williams & Grudnoff, 2011). Reflective teacher education aims to enable teachers to “have a clear view of their own philosophy and be prompted to consider how their beliefs, experiences and knowledge have shaped the theories they apply to teaching and learning” (Nolan, 2008, pp. 31-32). Therefore, reflection seems essential for teachers in order to critically question both ends and means and understand the complex nature of everyday classroom situations and their practice.

Practicum constitutes an integral part of initial teacher education in many countries. The main objectives of practicum is to help pre-service teachers gain knowledge regarding children's learning and development, familiarize with the nature of curriculum and subject-based approaches, develop communication skills, design educational activities and implement teaching strategies, manage classroom behavior, time and materials, assess and reflect (Cohen, Manion, Morrison & Wyse, 2010; Perry, 2004). In addition, practicum can provide a context for reflection enabling pre-service teachers realize educational processes and use research skills in order to understand a wider range of factors that affect pedagogical context and educational practice. In this perspective, reflection can be considered necessary not only to help pre-service teachers realize the connection between theoretical frameworks, certain practices and class

results (in the light of experience in the field where theory is not just “applied” but is exploited for understanding the educational context) but also it may strengthen the examination of personal assumptions related to certain issues and the planning of future actions that will change and improve teaching (Kampeza, 2013; Karalis, Sotiropoulos & Kampeza, 2007; Raikou, 2014). Whether there is a problem that the pre-service teacher confronts and seeks for solutions or a classroom situation the pre-service teacher wishes to reconsider, it is important to follow a procedure of reflection.

## 2. Critical reflection and transformative learning

As it was mentioned previously, several proposals can be found in literature regarding the reflection process. In the present research, emphasis was placed on Mezirow’s theoretical approach (1991), as we believe it is critical not only to describe situations but also to attempt to decipher specific choices and propose alternative solutions. According to his theory, in order to achieve this process it is necessary to proceed to a deeper level of the subject’s assumptions.

Transformative learning refers to the transformation of a dysfunctional frame of reference in order to become reliable for adult life, offering more justified interpretations and giving the subject the possibility to gain awareness of assumptions and experiences. The whole process of changing the way of thinking is called *perspective transformation*.

One of the cornerstones of his theoretical approach is *critical reflection*. Critical reflection is the vehicle to perspective transformation. It is defined as the reevaluation of opinions and values based on which we understand reality and act (Brookfield, 2012; Mezirow, 1998). The concept of critical reflection is connected to the effort to retrieve causes of an event or the justification of an allegation. This process, as an educational experience, doesn’t simply refer to adjusting or even exceeding existing knowledge, but also refers to exceeding fundamental assumptions of that knowledge. Thus, it is about changing the main perception of the frame of reference we have endorsed, as we developed as a person, changes that often influence our standards for action (Illeris, 2004).

*Content reflection* refers to thinking of the experience itself. This involves “reflection on what we perceive, think, feel, or act upon. Process reflection is an examination of how we perform these functions of perceiving, thinking, feeling, or acting and an assessment of our efficacy in performing them... Premise reflection involves our becoming aware of why we perceive, think, feel, or act as we do and of the reasons for and consequences of our” thoughts, feelings or actions (Mezirow, 1991, pp.107-108). Premise reflection includes occasions when we reflect on deeper, socially constructed assumptions, beliefs and values. Therefore, the change of our way of thinking, meaning overall transformative learning, can only come as a result of reflection on basic suppositions; and that is what critical reflection is all about.

In the present study, we attempted to explore the effect of introducing reflection processes on the practicum framework of the students of the Department of Educational Sciences and Early Childhood Education at the University of Patras. The Department offers a series of courses at the university and teaching experience in public kindergartens (2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup> year of studies). During practicum courses, the importance and usefulness of reflection are pointed out, while pre-service teachers are encouraged to reflect on their practice using written reports and taking part in small-group discussions.

The research questions we posed were:

- What are the main issues that they reflect on during the last semester of their practicum?
- Do they develop critical reflection (based on Mezirow's theoretical approach)?

### **3. Methodological framework**

The research presented here refers to the reports of forty students in their fourth year of studies that enrolled in the practicum program. Throughout the year, the students spent 18 days at the schools where they implemented daily schedules they had designed themselves or supported the kindergarten teacher's programming.

During the 7<sup>th</sup> semester the students filled out a reflection form after each school visit. The reflection was on the specific day of the visit, while at the end of the semester they reflected on the whole period. The questions were based on specific issues concerning teaching processes (implementation of the activities, time and materials), flexibility and addressing unexpected events, feedback, differentiation of instruction, interaction and communication with the children, cooperation with colleagues. These reports were more technical and closed based on given themes that functioned as "interpretive" lenses in order to help them make sense of their experience and analyze their teaching practice. After completing the form, a conversation was held: the students' answers were elaborated and opinions were exchanged and analyzed in order to reinforce the critical reflection process.

During the 8<sup>th</sup> semester students weren't given the reflection form. Instead, conversations and analysis took place systematically after visiting the kindergarten class, as happened during the previous semester. At the end of the 8<sup>th</sup> semester a reflection form was completed for the entire year. The questions were open-ended and students were encouraged to express their thoughts freely. We posed open-ended questions, such as:

- Why do you believe practicum is important?
- In your opinion, what do you feel you have accomplished during practicum?
- Where do you mainly attribute your effective actions and your ineffective ones concerning your teaching practice?
- Do you believe that the way you communicate with children has changed? In what way? What caused this change?
- Is there something that you have reconsidered and you may do differently?

The qualitative approach was chosen as the most appropriate for investigating issues that concerned us most. More specifically, qualitative content analysis was applied to examine the students' responses to the previous questions. Each student's answers from the reflection forms were analyzed both from the 7<sup>th</sup> and the 8<sup>th</sup> semester in order to have data at two levels: at a first level, we were interested in the answers the students gave to the questions posed. At a second level, we looked for elements of critical reflection in their answers in order to place the students in one of the three categories, depending on the degree of critical reflection according to Mezirow. This research presents the results of the data analysis of the students' answers during the last reflection.

### **4. Results**

The results concern data analysis of the pre-service teachers' last reflection in order to demonstrate similarities and differences regarding issues that were elaborated throughout the year and detect elements of critical reflection.

Table 1

*Coding Categories Developed from the Responses to the Question Concerning the Importance of Practicum*

Categories	Responses
Connection of learning theory and pedagogy with experiential knowledge	36
Providing an opportunity for professional experience & understanding of the role of teacher	25
Revealing what really happens within the context of classrooms	17
Enabling collaboration with experienced teachers	15
Realization of the value of communication with young children	11
Learning about oneself as a teacher (capabilities, limits, mistakes)	9
Understanding the necessity to be flexible and implement different kinds of activities	8
Valuing the importance and usefulness of reflection	6
Understanding the importance of proper preparation and consistency	6
Understanding the importance of children's observation in order to address their needs/skills	5
Cooperating with fellow students	5
Broadening professional interests	2

The majority of the responses concentrate on the first two categories demonstrating that the reflection process that was applied throughout the year could possibly serve as a tool that enables pre-service teachers to think beyond a specific moment in class and prepare them for subsequent professional learning and development. Furthermore, the concentration of several answers on the "collaboration with experienced teachers" category may reveal that there is a need for guidance and, at the same time, a need for satisfaction of becoming members of a learning community. The importance of reflection in the practicum framework is demonstrated in the 8<sup>th</sup> category, while the other categories are connected to a great extent to issues elaborated by the students during the school year.

Table 2

*Coding Categories Developed from the Responses to the Question Concerning What They Have Accomplished during Practicum*

Categories	Responses
Overcoming stress and acquiring confidence	37
Understanding how to communicate more effective with children and observe them	23
Managing various circumstances/situations with flexibility	20
Acquiring professional experience	20
Realization of various aspects of teacher's role	18
Effective cooperation between colleagues	14
Ability to set objectives, design, organize and implement activities	13
Understanding the importance and usefulness of reflection	9
Knowing myself better	9
Meeting the needs, skills and interests of young children	8
Proper preparation and consistency	4
Making teaching meaningful and interesting for young children	2
Teaching new knowledge to children	1

Most answers correspond to the first category, demonstrating that practicum facilitates students to gain confidence at what they do. Therefore, it prepares students to submit questions concerning their choices and specific beliefs. The next two categories show that using the reflection process during practicum may have enhanced pre-service teachers' consideration of children's level of understanding. From the next

three categories it becomes clear that they now understand more dimensions of their role, while the 8th and 9th class show the recognition of the value of the reflection, which in the context of the practice, seems to lead to better self-understanding. From the next three categories it is evident that the students understand more dimensions of their role, while the 8th and 9th categories show recognition of the value of reflection that seems to lead to a higher level of self-understanding in the context of their practice.

**Table 3**

*Coding Categories Developed from the Responses to the Question concerning Attributes of Effective Teaching*

Categories	Responses
Proper preparation	25
Guidance and effective cooperation with the teacher of the class	14
Ability to be flexible in class	10
Effective cooperation with 2 <sup>nd</sup> student in class	8
Observing how children think and react	7
Proper presentation of the topic and coherence of activities	7
Love and care for children	4
Theoretical framework from courses in university	3
Reflection	2
Children that were cooperating	2
Topic that was based on children's experiences	1
Patience	1

As it is demonstrated in Table 3, the majority of the pre-service teachers attribute their effective teaching to proper preparations that also integrate discussions during class. Flexibility in the classroom and working with the teacher and fellow students also play an important role. A clear reference to critical reflection is noted in two occasions; however, the category of observing children and the category of making use of the theoretical framework may be connected to aspects of reflection.

**Table 4**

*Coding Categories Developed from the Responses to the Question concerning Attributes of Ineffective Teaching*

Categories	Responses
Lack of experience and stress	27
Difficulty to deal with children's reactions	9
Topic and structure of schedule	6
Pressure (a lot of things to do during practicum)	5
Not having adequate time to get to know all the children	4
Lack of proper preparation	3
Setting unrealistic objectives	2
Having children with special educational needs	1
Financial reasons (cost of materials)	1
Children getting tired	1

Lack of experience and stress gather the majority of the responses. What seems to derive from the other categories of this table is that many answers are connected to their role and a shift to place responsibility on their behavior and choices.

Table 5

*Coding Categories Developed from the Responses to the Question concerning Issues that They Have Reconsidered and May Do Differently*

Categories	Responses
Focusing on children (listen to them, child-initiated activities)	19
The way of communication with children (understanding their thinking)	19
Flexibility (no “recipes”, need to have alternative options)	9
Importance of reflection	7
Taking advantage of experience in class to be effective teacher	7
Proper preparation	5
Moral responsibility to children	3
Personal characteristics	3
Meaningful learning (motivation & connection to everyday experiences)	1
Children having fun	1
Time management	1

The categories concentrating the most answers relate to focusing on the children and ways of communication with them. Alternative solutions and the importance of reflection are also popular answers, while it is interesting that the categories of moral responsibility and personal elements seem to be connected to issues of principles and values.

The following table demonstrates the classification of the pre-service teachers according to Mezirow's forms of reflection. The first form of reflection relates to answers referring to situations and participants in the educational process (for example ill-behaved children, theme/activity type, etc.). There is no critical examination of their behavior.

For example, “Some children often interrupt with something irrelevant or bother the other children. As a result I can't continue at the momentum I had before the interruption and the children get distracted. Another problem was when two consecutive activities required the children to sit. For instance, when one activity was a discussion on a topic and the next one was reading a story, children got distracted during the second activity” (S9).

The second form responds to answers that describe the students' experience through their role (how they managed the situation, which actions worked and which did not and why, what they would do in a similar occasion, what they gained from this experience etc.).

For example, “Spending time with children surprised me when I saw how much they can think, say and do. Children have their own opinions and judgment... I also realized that proper behavior is required from them as much as myself in order to gradually build a relationship of trust, respect and love” (S18).

The third form corresponds to answers that are related to issues of pedagogical principles and changes of opinion.

For example, “I went through a wide range of emotions (e.g., joy, sorrow, excitement, frustration) and I evolved as a teacher. I defined my position and my role in the classroom and I learnt a lot about myself as a person, as an adult and as a new teacher... You can't have a “sterile” role when the children evolve constantly. This awareness may have changed the way I communicate with the children” (S10). “Self-criticism and reflection never end. I took some things for granted but nothing really is in the end. Every child needs time and at a different degree. You need to be there for all the children and for every one individually” (S38).

**Table 6**  
*Forms of Reflection (Mezirow)*

Form	Responses
Content reflection (description of their experience without assessing their actions)	2
Process reflection (focus on their role concerning their experience)	25
Premise reflection (questioning the validity of beliefs, pedagogical principles)	13

## 5. Discussion

It is clear that a growth in pre-service teachers' thinking has taken place. Concerning our first research question almost all the reflection issues that were proposed appeared in last semester's report:

- Communication and interaction with children
- Flexibility and addressing unexpected events
- Using observation in order to address children's needs/skills
- Proper preparation (design, time, materials)
- Cooperation with colleagues

Furthermore, issues that came up in last semester's report show that pre-service teachers were able to better cope with the complexity of teaching and their role:

- Connection of theoretical perspectives with experience in class
- Their professional role and the way they see themselves as teachers
- Handling personal characteristics and feeling confident about their choices
- Reflection is viewed as a key component of teaching practice

Concerning our second question, results show that the majority of pre-service students are classified in the category of "process reflection" that is more instrumental and focuses on solving specific problems. However, 13 of the participants were in the "premise reflection" category; this is particularly encouraging, since it is the starting point for deeper understanding and change.

The students that represent the third category show increased responsibility and sense of duty. They show exceptional sensitivity and respect towards the children's perception of the world. More specifically we noted that:

- They pose questions of ethics and pedagogical principles (liability issues of their role, necessity to respect the needs of children, etc.).
- They don't limit themselves to the learning object but also make generalizations and try to meet children's wider needs. They try to directly connect everything the children learn to their lives and approach knowledge holistically.
- They make sure that what they do is essential for the children and they don't simply rely on the implementation of a well-designed program.
- They believe it is very important that the learners know not only *what* they are learning but *why* they are learning it (as they put it "to gain conscious experiences"). This means that they try to help children develop critical thinking.

Furthermore, the students noted changes in the way they perceive themselves: changes in their behavior, their perceptions about educational practices and pedagogical principles, as well as emotional changes, differences that are now conscious. These changes are identified both at a personal level as individuals and at a professional level regarding their role as educators.

Concerning the support of reflection in the context of their practice, we suggest the implementation of more processes that can facilitate reflection, such as journal writing, interviews, and dialogue concerning critical events in order to create various opportunities for reflection. Developing a set of focused questions in each case may enable pre-service teachers to move beyond the general description of the activities

(what went well and what did not) and toward critical reflection placing each situation in a broader context that requires deeper explanations and proposals.

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## ***10. Teacher's Professional Development***

## **10.1. The contemporary landscape of Greek teachers' professional development. Issues of policies, methodology, practices and perspective**

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### **Abstract**

*In this paper issues related to methodology, policies and practices of Greek In-service Education and Training (INSET) will be posed. Concerning methodology new forms of INSET mainly related to school based professional development are underlined. In regards to policies of INSET the deficit of a well elaborated national strategy is pinpointed as well as difficulties in record of INSET needs, planning, realization and evaluation of relative programmes. On the level of practices the need to model them for a better exploitation is noticed. Finally, the need of a “golden section” of top down and bottom up policies for INSET is stressed.*

**Key-words:** Professional development, teacher, policy, methodology, practice

### **1. Introduction**

A very old claim of the Greek teachers, *In-service Education and Training (INSET)*, in the last three years is located in a crucial bending. A new, contemporary framework of INSET is needed during the period of the Greek economic crisis and globalization. The theory, the methodology of INSET has progressed. An INSET focused on professional development is needed, as this is not always the case in action (Bagakis & Skia, 2015).

There is a vacuum and a freezing on the level of the central educational policy. Moreover, this situation was marked by relative recent negative versions of obligatory INSET addressed to executives of education (e.g., school advisors, principals). This INSET concerned the evaluation which these executives were going to realize in schools and was finally frozen at the beginning of 2015.

In this paper, policies, methodology and practices of the Greek INSET will be discussed. What seems to be needed, after the change of the conservative government in January 2015, are ways in order to go beyond this negative situation of the mentioned framework. About one year after the mentioned change of government, new policies for INSET are expected. What is the alternative in this case?

### **2. The methodological landscape of Greek INSET**

In relation to INSET methodology, new forms of INSET are underlined as the schoolbased forms of professional development, the long distance INSET, the INSET networks etc. (Bagakis, 2016). More concretely, two main sides of INSET are stressed in this paper: (A). On the INSET which corresponds to the existing multiple and different teachers' INSET needs and (B). On the school based INSET and professional development.

#### **2.1. INSET which corresponds to the existing multiple and different teachers' needs**

In regards to the existing multiple and different teachers' INSET needs, it should be underlined that it consists of a dynamic field for the future in Greece because of the

aggregated experience of a big number of smaller or bigger INSET programmes, which have been realized during the last decades in the framework of various European INSET programmes. More concretely, a big discussion has to take place at least concerning the way that the following take place:

- a. *Recording of INSET needs.* It is a huge rather uncharted space in the last years, on the national/central level as well as on other levels, from the level of periphery to the level of the school unit. Some studies realized by the Teachers In Service Training Organization (ΟΕΠΙΕΚ) in the mid2000s has to be mentioned in this direction.
- b. *The trainers' selection.* This is a component which very often involves payments, personal careers, corporative interests, technical and institutional limitations and for this reason there are many difficulties in it. Beyond all these elements, many times the trainers' selection becomes more difficult from the overestimation of academic criteria in comparison to the INSET experience in the field. One typical example of the last issue is the fact that in an evaluation of induction programmes of the period 2009-2010 and 2010-2011 tutors who belonged to university teaching staff and had a highly academic profile were not the first selection of tutors for the trainees (Vergidis, Yfanti, Anagnou, Vathi, Valmas, Vozaitis, Markopoulou, Tzintzidis, Tourkaki, 2011).
- c. *The trainers' training.* In relation to the previous element, the trainers' training associated with proper teaching materials for the trainers as well as for the trainees constitutes another crucial issue for INSET.
- d. *Planning, realization, coordination, evaluation of each INSET programme.* As it is well known, these elements form the basic pillars of each INSET programme and have to be extensively discussed within the Greek context of INSET.

## **2.2. The INSET and the schoolbased professional development**

In a recent conference of the Unit of Methodology, Policies and Practices of INSET of the University of Peloponnese entitled: "Methodology, policies and practices of School based INSET and Professional development" in Corinth in February 2015, a wealth of relative approaches was emerged from different geographical areas of Greece, Cyprus and England. They referred to bottom up attempts and initiatives based on school, groups and collaborations of teachers within one or more schools or in collaboration with other organizations as universities etc. (Bagakis, 2016).

Mentoring and coaching, school self-evaluation, the networks and school collaborations were characteristic methodologies in this direction. It should be underlined that in certain methodologies there were central policies which were very frequently degraded, as in school self-evaluation (Bagakis, 2016). Moreover, some of these methodologies were almost institutionalized with central policies, which have not been finally realized and for this reason they have not been sufficiently used except for few isolated cases as in the case of mentoring (Bagakis, 2016). It should also be mentioned that a variety of INSET networks and long distance INSET existed, which play a significant role in the teachers' professional development of in Greece as well as internationally (Liakopoulou & Daloukas, 2015; Xatzipanagiotou, 2016)

Moreover, it should be mentioned that there are effective methods, which have not been adequately exploited so far, like the portfolio of teacher professional development (Dermetzi, Vitsaki, & Tseberlidou, 2015).

### **3. The political landscape of INSET**

Concerning the level of educational policies, the deficit of sufficient elaborations towards a national INSET strategy is underlined. Moreover, there are difficulties concerning the level of recording INSET needs, planning, monitoring, and evaluation of the INSET programmes. They are often limited to a technical level and to pressing procedures. Thus, they are realized in a hurry in order to complete procedures in a given time imposed by the European projects framework. This results from the fact that many of these projects have not been planned or realized in time.

Closing the discussion for a national strategy of INSET, it should be underlined that today, in a period of economic crisis in Greece, taking into account the existing deficit of INSET, the necessity for planning and realizing a national policy for INSET is urgent. More specifically, a national policy with planning, objectives, priorities, co-ordination is necessary. An effective framework of priorities has to be created concerning policies, methodologies, practices which they will be attenuated and modelled. In this framework, the “golden section” and the bidirectional communication of the bottom-up and top-down modes of professional development seems to be a significant request (Μπαγάκης, 2015α).

### **4. The landscape of INSET practices**

As far as the level of practices are concerned, there is a valuable richness of innovative practices, which should be detected, pushed forward, supported and modeled for their best development and exploitation.

### **5. The dynamic and perspective of INSET**

A more general finding concerning what was referred to so far is that there is an enrichment of the theory, methodology, policies and practices of INSET in Greece. This consists an element to be used by teachers and their associations, schools and the Ministry of Education who should take advantage both of the top down as well as the bottom up forms of professional development.

What should be avoided is an INSET which operates by taking into account criteria that derive from political parties and their members. It is not important what the color of the political party is, either blue, green or red. The educational community has a big wealth of important teachers and executives outside the selection of political parties (Bagakis, 2015).

I hope that “the few” who make the “express decisions” finish as soon as possible, as it has also been already announced by the leaders of the Ministry of Education. I wish that the “perfume” of a substantial dialogue will follow within targeted working teams consisted of individuals from the wider educational community and not only from members of specific political parties. This has to take place on different levels as the Institute of Educational Policy, the peripheries, the directorates of primary and secondary education etc.

A significant role could be played in the same direction on a central or decentralized level by the scientific associations and the unions of teachers as well as other initiatives and networks of teachers.

A wider framework without easy simplifications or generalizations for teachers, school advisers, and university teaching staff is needed. Nothing is “white or black” because within each of these categories who participate in teacher INSET, there is a big range of individuals, groups, interests, positive and negative elements which form the INSET field.

An honest dialogue is necessary, without beautifications, study of both positive and negative elements of teachers INSET. If everyone joins “to sell his own -unique in the world= merchandise” nothing substantial can be produced. A long term systematic work is needed without populism and with an honest consideration of the existing situation. The above mentioned constitute elements to be used, which could probably spark the hope, give a perspective from the “embers” of Greek Economic crisis and the deficit of teachers INSET.

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## **10.2. Experiencing mentorship, as a field for professional development in Early Childhood Education<sup>1</sup>**

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### **Abstract**

*This study portrayed a picture of teachers' expectations who were mentors in a practicum program and their opinion about their role and the points that they made them feel satisfied after the end of the program. The sample of this study consisted of 7 early childhood education teachers with teaching experience ( $M=22$  years,  $SD= +/- 6$  months) of the region of Volos. Data were collected through semi-structured interviews and analysed through the content analysis. The results of this study indicated that teachers had the opportunity to evaluate their self and develop contact skills and emotions. Most of them consider that mentoring was a unique experience for them. Two types of information can be extracted from the results: an understanding for the sense of mentoring from the teacher's view and how mentoring can be a field for professional development in Early Childhood Education.*

**Key-words:** Student's practicum, mentoring, cooperation, satisfaction

### **1. Introduction**

What is mentoring? Initially, it is important to acknowledge that the term "mentor" is borrowed from the male guide, Mentor, in Greek mythology. So, mentoring based on the Greek word meaning enduring is defined as a sustained relationship between a youth and an adult. Through continued involvement, the adult offers support, guidance, and assistance to the younger person. There are two types of mentoring: natural mentoring and planned mentoring. Natural mentoring occurs through friendship, collegiality, teaching, coaching, and counseling, while planned mentoring occurs through structured programs in which mentors and participants are selected and matched through formal processes. There is no universally accepted definition but most studies define mentoring as: a term generally used to describe a dyadic, face-to-face, long-term relationship between a supervisory adult and a novice student that fosters the mentee's professional, academic or personal development (Donaldson, Ensher, & Grant-Vallone, 2000). Evidence suggests that mentoring and coaching are amongst the most effective means of supporting teachers' professional development (Hobson, Ashby, Malderez, & Tomlinson, 2009a). Hobson and Malderez (2013) definite mentoring as:

"a one- to- one relationship between a relatively inexperienced teacher (the mentee) and a relatively experienced teacher (the mentor), which aims to support the mentee's: (a) learning and development as a teacher; (b) wellbeing; and (c) integration into and acceptance by the cultures of both the organisation in which they are employed and the wider profession" (p.90).

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A mentor can act as a model and may offer advice to help solve problems. The mentor's role is coaching, which relates to attempts to support an individual's development of one or more job-specific skills or capabilities (Hopkins-Thompson, 2000; Malderez & Bodoczky, 1999). This definition tends to be broader and more holistic. So, it is concerned with the person's overall life development (Whitmore, 2002). Many countries worldwide have implemented particular types of mentoring programs in hospitals, schools, public sector departments, universities, etc. A strong message in much of the literature is that mentoring is a very positive experience. An important scholar in the field, Clutterbuck (2004a), goes as far as saying: "I have yet to find anyone who is self-sufficient enough not to benefit from a mentor at some point in his or her life" (p. 7).

To discover the outcomes of mentoring, Hansford, Tennent, and Ehrich (2003) analysed and coded 159 pieces of research on mentoring in education contexts (i.e. schools, universities, TAFEs) to determine the benefits and the shortcomings for the mentee, mentor and the organisation. They found that benefits for mentees are psycho-social supportive outcomes, such as support, encouragement, friendship, role modelling and increased confidence. Moreover, the most frequently benefit for mentors was determined: collegiality, collaboration and networking. Additional research into school-based mentoring outcomes found that mentored students developed more positive attitudes toward school, were more likely to trust their teachers, and developed higher levels of self-confidence and a greater ability to express their feelings (Curtis & Hansen-Schwoebel, 1999; Karcher, 2005; Karcher, Davis, & Powell, 2002). There are many models and theories that have been put forward to explain the mentoring process and the functions played by mentors.

Mentoring programs generally serve the following broad purposes:

- Educational or academic mentoring helps mentored youth improve their overall academic achievement.
- Career mentoring helps mentored youth develop the necessary skills to enter or continue on a career path.
- Personal development mentoring supports mentored youth during times of personal or social stress and provides guidance for decision making.

Our mentoring program for the student's practicum serves the following broad purposes:

- To have more people to implicate with student's practicum
- To explore if the idea of "mentor" can work in our practicum program
- To renew our program
- To bring together university and schools

The mentor program started in the spring semester 2015. In early November, we made a "call" to Early Childhood Education (ECE) teachers, who were eager to participate in the program. At the beginning of December, we had the first meeting with the teachers explaining them the aims and the procedure of the program. ECE teachers had a six hour training (3X2). Training material was prepared and given to ECE teachers. Moreover, the training component provided skills development for mentors to hone their communication, listening and feedback skills. Without an understanding of the purpose and goals of the program, the mentoring program was unlikely to work effectively. We had a "mix and match" meeting after the end of the training so that mentors meet their mentees.

## **2. The goal of the study**

In this study, we will focus on mentors' perceptions concerning their new experience, especially their:

- Expectations
- Their role
- Their benefits from the program

They could provide key information about mentorship, as a field for professional development in ECE.

## **3. Methodology**

### **3.1. The participants**

The study was carried out in the town of Volos. The targeted population for this study was composed of ECE teachers, who were eager to participate in the program. The total number of them was seven. All of them had minimum teaching experience ( $M=22$  years,  $SD= +/- 6$  months) and age  $M=38$  years,  $SD= +/- 8$  months.

### **3.2. Instruments and measures**

The research comprised semi-structured interviews with teachers, mentors. Interviews were used because they provide insights into the teacher's opinions, perceptions, and attitudes (Glesne, 1999). In addition, interviews were used because they provided the simplest, most convenient way to gain knowledge of the teacher's beliefs of the mentorship in ECE research guided by principles of autonomy and beneficence, sufficient information given to participants to allow an informed decision to participate. More specifically, when the program of the student's practicum was ended, a researcher met every teacher, mentor in her school class. The meeting time was defined by teachers. In the beginning, all teachers had time to see the questions of the interview. Only when each teacher was ready, did the interview start. All interviews were recorded and transcribed.

### **3.3. Analysis and results**

After completing interviews and transcribing the tapes, the data were analyzed. The analysis of the study was based on a constant comparative method of data analysis. We systematically review the transcripts and field notes in relation to research questions. The analysis was related to summarizing the informational contents of the data. According to Glesne (1999), after interviews are conducted the data should be coded to provide ease to analyze the data. We made a list of common themes.

The categories developed based on our interviews were:

- ▶ How teachers evaluate their experience
- ▶ How teachers describe their role and the relation with the students
- ▶ How teachers describe their relation with the students
- ▶ How teachers describe their tasks in this relation
- ▶ What made teachers feel satisfied at the end of the program
- ▶ How teachers believe that this experience helped their professional development?

Regarding the first question, all the educators replied "I profited by the mentor program". Justifying their response, 66.6% of them focus on the importance of the lifelong learning which was achieved through new ideas taken from the students. "I was explicitly taught innovative actions, programmes and so on. I was renewed in all the areas and I really loved it. ...I profited, I believe in lifelong learning, it was a way to learn things and gained a lot from the students, this is the reason I believe I benefited.

... We only gained an advantage and alas if we say that we lose ... I'm very happy as they offered new things and new experiences which was renewing for both of us and the class. Entering the classroom these new faces smiling and shining, we even renewed our children. They were also very happy at the presence of the students. ..As I believe that we live and learn I like learning new things". 33.3% of the educators support that they benefited because they had the opportunity to self-assess. "..Moreover, I conducted self-assessment as I worked with myself again, I considered what I have done, what else I should do or give, how I should behave ... And I evaluated not only my pedagogical work but myself, too". At the same time, 33.3% of them believe that they profited because the whole process made them feel pleasantly reviving previous similar experiences. "I want to say that I was thrilled by this role due to the fact that I recalled my experience with the students as it was five years I did my work in the university with students and their practicum in schools. ... What I experienced in the teachers' training school then ... I experienced it again this year but had the role of the teacher this time". In addition, 50% of them focus on contact and emotions. "I met two nice people who I think have become my friends and I also believe that we will continue this friendship in the future as well. .... What is really important is that you have the chance to meet a new person who is a student now and a colleague tomorrow! There were feelings of love in the end."

In terms of the second question, 50% believe that the mentor's role is guiding. "As far as the second question is concerned, my role ... was supportive counseling, guiding, ... there was an interaction but I was correcting errors, such as reducing many activities etc ... the only word I can now find is that my role was a mother's role. This is what comes to my mind". 33.3% of the educators answered that they did not direct their students but the latter had complete freedom. "I didn't want to direct or guide them. I allowed them some... freedom of movements. I just said I'm here whenever you need me, anything you want I'm here. ...I considered them to be equal members and not as if they were under my supervision – they were partners, I let the children feel free, we exchanged views and ideas". 16.6% of the educators adopted inspiration and motivation as a key element in the role of the mentor. "Encouraging,... I gave them motivation, an idea... and they were trying to implement it. I inspired my students through my personality and my attitude".

Regarding the third question, 50% of the educators saw the relationship as a cooperation- contribution. "As for me, there was a very good and constructive cooperation ...The relationships were of mutual appreciation and respect". The remaining 50% of the educators got attached emotionally. "... like a mom and a daughter .... There was not only respect but friendship as well, within limits. ... we also met outside the classroom, we trusted each other with personal information ...we still talk about their exams and others.. "

In terms of the fourth question, 33.3% of the educators claim that it is the students' duty to organize their own activities by themselves and later to be offered help if they need it. "...the students had their plans and their organization. As for me, I could give my opinion, if they wanted to take it into consideration ... I wanted to be very cooperative but at the same time leave them space and whenever they needed me, they knew I was here for them which happened after all". While 66.7% of the educators support that creating activities through the exchange of ideas together with students was a basic duty. "...I helped them understand their plans .... have clear objectives ..... they would ask me questions, they also had material from me ... .we discussed either personally or by mail ... .we ended up with some things and very often they put me

forward to watch and do the same ... after a long discussion we decided together and agreed on what they can do ..".

Regarding the fifth question, 66.6% of the educators felt satisfaction with the skills acquired by the students during the period of practical work. "...I felt satisfied because the children also responded in difficult situations with great interest. In the class there was a child who had some problems and responded very well ... fully integrated in the class. ... The students followed the spirit and the philosophy within the framework they found". 33.4% of the educators focused their satisfaction on themselves – it was personal. "...that I responded to the role of the educator, I relived the moments when I was a student myself ... The whole process made me feel satisfied, because I've already told you that they are new blood, I may not be very old, I have worked for 17 years, but the girls brought new ideas and energy within the department, I liked it, I felt renewed".

In terms of the sixth question, 83.3% of the educators believe that the whole experience contributed to their professional development because they had the opportunity to evaluate themselves and improve their pedagogical work. "...I don't know, they gave rise to new things. We both got feedback which contributed to the development of the pedagogical process. ... I put myself in the place of the observer and assessed our pedagogical work ....I benefited more than the children, they just did their duty. It contributed fruitfully to my educational course, we were able to self-assess and improve ourselves... You feel more complete recognizing your potential weaknesses". 16.6% of the educators consider that it didn't contribute to their professional development. "... it didn't help. I may have broadened the circle of my acquaintances in the university and met other people too but I'm not interested in anything else...".

#### **4. Conclusion**

In conclusion, we would say that mentorship helped both students and educators. There was very good communication in both sides, while plenty of emotions were also developed. It was a pleasant experience that they would like to repeat. Referring to the role, the results are consistent with other studies, as reported by Rippon and Martin (2003): "On the one hand, the mentor must recognize the right of the freshly hired educator to be treated with respect and trust, be an active partner in the dialogue and be given effective feedback in an honest and sensitive manner. On the other hand, the mentor has the right to give constructive feedback, to be heard and taken into account" (p. 223). The educators declared that they have benefited from this process mainly because they assessed themselves and improved their practices. According to the literature review, the benefit from this mentor's relationship, which is referred most often, is the fact that it offers the opportunity to the mentor to reflect on their own professional knowledge, beliefs and practices (Common Wealth Department of Education, Science and Training, 2002).

It is obvious that both the mentors' personality and their ability to guide the prospective teacher determine the quality of the mentor-educator relationship. As mentioned by Tickle (1994), the mentors' reliability as educators, their experience, their compassion, their sensitivity, their intimacy, their sense of humor, their ability of a good listener, their calmness, their accessibility to materials and sources, their availability, their positive constructive nature, their encouragement, their honesty and reliability are characteristics that a good mentor must have. Eventually, the result of the research indicated that the application of mentorship had very positive effects on them. As the relationship is bidirectional, we revealed that the students-candidate

teachers definitely found many of the above features mentioned by Tickle in their own mentors.

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### **10.3. Teachers' organizational commitment and work engagement levels**

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#### **Abstract**

*Purpose of this study is to explore the instructors' the views who work in the primary, middle and high school of a town in Turkey about their work engagement and organizational commitment. Research population is composed of teachers who work in Denizli-Kale/Turkey. In this research the data collection tool consists of three parts. The teachers' common level of work engagement is higher than teachers' organizational commitment level. There are different discoveries in literature about gender effects on work engagement and organizational commitment.*

**Key-words:** Organizational commitment, work engagement, teachers

#### **1. Introduction**

Education is one of the important stages of the formation of society, as education is the whole system in which morality, attitude, information and skills are given. We need institutions to construct these human being behaviors. To achieve this, education system needs an institution (school) and staff (teachers) (Çubukcu, Özenbaş, Çetinkaya, Derya, & Şeker, 2012).

School is a institution which was established to give literacy, basic mathematical skills, abstract formations and opinions to students (Çubukcu et al., 2012). The teacher is the most important point in every school. Arsal defines that “teacher is the member of the occupation who teaches specific subjects to students group or single student” (p. 105). Teachers have roles and responsibilities for education process. If there is a success or failure in an education progress, teachers have responsibilities for this too (Çubukcu et al., 2012). Schools are the organization which come together in a common goal event with two or more memberships deliberately coordinated.

While there are a lot of studies about the employees' positive behaviours regarding organizational commitment, the work engagement topic has been used increasingly in recent years. Work engagement has been defined differently in literature but it refers to the opposite meaning of negative feelings for work. Esen (2011) expresses that “some researchers named the process of integration in their studies differently, such as: integration is being hired engajement Güneşer (2007), integration means working connected whole heartedly (Doğan, 2002), Balci (2010) calls integration as work addiction, Turgut (2010) calls integration as hiring the doors and Ardinç and Polatçı (2009) express integration as work engagement” (p.379).

## **2. Theoretical framework**

### **2.1. Organizational commitment definitions**

The success of organizations is possible with qualified workers so workers should be provided with psychological and social requirements to ensure organizational commitment. Teachers' organizational commitment ensures teachers satisfaction about their work, which affects students' personal achievements and school achievements too. Teachers' organizational commitment has positive effects on teachers' relationship with students, colleagues and students parents' (Balci et al., 2012).

### **2.2. Forms of organizational commitment elements**

Affective Commitment: Employee's commitment in which they feel and embrace the goals, value and purpose of the organization within the same proportion (Bayram, 2005).

Continuity Commitment: Employees' awareness of the cost in case they leave the work, became show commitment to the organization as a result of their investment (Bayram, 2005)

Normative Commitment: Employees' ethical feelings for their obligation to stay in the organization. Being aware of working in the organization as a task for them is to feel and show true commitment to the organization that affected the calculation of the losses will occur as a result of leaving the organization (Bayram, 2005).

### **2.3. Definitions of work engagement**

When organizational commitment is strong, the willing to work in an environment where employees are connected to the work engagement is increasing. Work engagement has a lot of synonyms. Esen (2011) describes integration of work as: "individuals passion for his institution and his excited, energetic approach"(p. 381). Esen (2011) indicates that individuals with work engagement work long, are disciplined and make an effort to make real their organizations. Ardic and Polatci (2009) sub-dimensions are 'energy' instead of emotional exhaustion, 'sense of belonging' instead of desensitisation and 'sufficiency' instead of low personal success in integration with work.

According to Schaufeli (2002), work engagement consisted of three dimensions:  
Vigor: It can be explained through high energy level and mental vigor. Symptoms of vigor can be described as being disposed to do a job by resisting and going on against difficulty.

Dedication: Involvement in a work with feelings of enthusiasm, inspiration, competition, and the importance of the work you are doing.

Absorption: Total concentration when keeping yourself busy with the work, the happiness that comes from it, and the unawareness of the time passing by.

### **2.4. Related studies**

There are a lot of studies about organizational commitment. Yilmaz (2009) shows that there is a significant relationship between teachers' organizational commitments and their job satisfaction and their organizational creativities in schools. Karataş and Güleş (2010) reveal that elementary school teachers have high job satisfaction and organizational commitment, while emotional factors (time in school, labour) are more effective than others in their study. Kayır (2013) shows that school principles' normative commitment level is higher than affective and continuity commitment levels. Karapostal (2014) reveals that there are significant differences between school leaders' perception of organizational commitment according to variables, such as gender,

marital status, age participants. Deniz (2014) shows that the teachers in the affiliated research institutions are the most emotional. Literature has been working on the integration of the different factors that affect the work. According to Ari (2011), the work environment should be positive to increase individuals' levels of integration with work. Karataş and Güleş's research (2010) base on Sharma and Bajpai (2010) shows that employees who have high job satisfaction for organization are bounder than employees who have low job satisfaction and can be dangerous for the organization.

### **2.5. Research questions**

Is there a significant relationship between instructors' work engagement and organizational commitment?

Another aim of this study is to explore the instructors' level of work engagement and organizational commitment according to some variables, such as:

- Gender
- Age
- Profession Seniority
- Marital Status
- Time in school.

## **3. Method**

### **3.1. Research model**

The purpose of this study was to explore the instructors' views, who work in the primary, middle and high school of a town in Turkey, about their work engagement and organizational commitment. Moreover, the research uses the associational model to view the relationship between organizational commitment and integration with work. Associational researchers aim at revealing relationships between variables using relationship tests (Balci, 2011).

### **3.2. Participants**

The participants of the study were teachers who were working in Denizli-Kale/Turkey (in formal elementary school, secondary school and high school). The study took place between March and April 2015 after taking approval from Kale District National Education Directorate. 282 instructors' data were evaluated from 30 schools.

### **3.3. Data collection tools**

In this research, the data collection tool comprised three parts:

#### **1. Personal Information Part**

In this part of the survey teachers were asked to answer questions about gender, age, seniority, and marital status depending upon his/her past experience in the current institution.

#### **2. Scale of Organizational Commitment**

The Scale of Organizational Commitment based on Allen and Meyer (1990) was used to measure teachers' organizational commitment. The Scale developed by Allen and Meyer (1990) consists of 18 items used to determine teachers' organizational commitment. Halis (2010) translated it in Turkish and used it in his studies.

#### **3. Scale of Work Engagement**

Employees' work engagement levels were measured by the Utrecht operation Integration Scale (UWES), which was provided by Schaufeli (2006) and friends and translated by Atilla Bal (2009). The scale consists of 17 questions.

The data arithmetic averages are calculated to determine the relationship between the level of organizational commitment and the level of integration with work. Besides, nonparametric Mann Withney U tests was used to show differences in gender, martial status, age and time in the school, in organization commitment and integration with work. The non-parametric Spearman Correlation analysis was performed to designate the relationship between work engagement and organizational commitment by Kruskall Wallis H-Testler.

#### 4. Results

When Table 1 is examined in detail, it shows that 200 teachers are married (70.9%), 162 participants are teachers (56,7%), 117 participants have an age difference (41.5%), 93 teachers are working 6 and more years (33%) and 234 teachers are working 5 and less years (83%).

**Table 1**  
*Participants' Personal Characteristics Database*

Category	Variable	Frequency	%
Marital Status	Married	200	70,9
	Single	82	29,1
	Male	162	56,7
Gender	Female	122	43,3
	21-30	117	41,5
Age	31-40	114	40,4
	41 and more	51	18,1
	1-5 year	77	27,3
	6-10 year	93	33,0
Profession seniority	11-20 year	71	25,5
	21 and more	40	14,2
	1-5 yıl	234	83,0
	6 and more	48	17,0

**Table 2**  
*Mann Mann Withney U test results difference in subjects' gender and marital status, Work Engagement and Organizational Commitment*

	Category	Variable	n	Sum of array	Average of array	U	Z	p
Work Engagement	Gender	Male	150	226	150,83	85	-2,052	,040
		Female	132	172	130,90			
	Martial Status	Married	200	286	143,45	78	-0,629	,529
		Single	82	112	136,74			
Organizational commitment	Gender	Male	150	229	152,92	81	-2,510	,012
		Female	132	169	128,52			
	Martial Status	Married	200	279	146,92	77	-1,607	,108
		Single	82	119	130,30			

According to Table 2, meaningful differences in work engagement and organizational commitment between genders are revealed. Men's work engagement level (150,83) is much higher than women's work engagement level (130,90).

Furthermore, men's organizational commitment is higher (152,92) than women's organizational commitment (128,52). Meaningful differences are not found in work engagement and organizational commitment between married and single teachers. It is also noted that the male and married instructors are better engaged in their work.

Table 3

*Kruskall Wallis H-Test Results regarding Differences in Subjects' Age, Profession Seniority, Period of being in the Same School, and Work Engagement*

		variables	N	average	X <sup>2</sup>	sd	p
Age		22-30 age	116	131,72	7,783	2	0,20
		31-40 age	115	169,42			
		41 and more	51	138,98			
Work Engagement	Profession seniority	1-5 year	85	131,82	4,766	3	0,190
		6-10 year	90	140,26			
		11-20 year	68	166,04			
		21 and more	39	141,17			
	Period of being in the same school	1-5 year	225	138,70	2,313	1	0,252
		6 and more	57	152,54			
Age		Variables	N	Average	X <sup>2</sup>	sd	p
Organizational Commitment		22-30 year	116	147,81	2,255	2	0,279
		31-40 year	115	132,10			
		41 and more	51	148,04			
	Profession seniority	1-5 year	85	148,18	2,280	3	0,423
		6-10 year	90	147,89			
		11-20 year	68	132,94			
		21 and more	39	129,19			
	Period of being in the same school	1-5 year	225	144,02	1,936	1	0,164
		6 and more	57	125,97			

Results in Table 3 show that there are no differences in age, profession seniority and period of being in the same school, in work engagement and organizational commitment.

**Table 4**  
*Spearman Correlation Analysis Results on Identifying Relations between Work Engagement and Organization Commitment*

		Work Engagement	Organizational Commitment
Spearman's rho	Work Engagement	Correlation Coefficient	,056
		Sig. (2-tailed)	,350
		N	282
	Organizational Commitment.	Correlation Coefficient	1,000
		Sig. (2-tailed)	,
		N	282

Table 4 shows that the relationship between organizational commitment and work engagement is positive and medium level ( $r=.056$ ;  $p>.350$ ). An extremely positive relation between instructors' work engagement and organizational commitment was found in this study. So, instructors' work engagement level can increase depending on their organizational commitment.

## 5. Conclusions and recommendations

The teachers' level of work engagement is higher than teachers' organizational commitment level. There are significant differences in gender for male teachers in organizational commitment and work engagement but there is no significant difference in terms of their marital status. For this study, gender is determinant for teachers' work engagement and organizational commitment level. There are different findings in literature about gender effects on work engagement and organizational commitment. Some studies have significant differences in gender (Altinkurt, 2010; Halis, 2010; Kurşunoğlu, Bakay, & Tanrıögen, 2010), while some others indicate no differences (Ari, 2011; Kavgacı, 2014; Sezen, 2014).

Research shows that there are no significant differences in terms of martial status in work engagement and organizational commitment level. Some studies show that married teachers' levels of work engagement and organizational commitment were higher than single teachers' levels of work engagement and organizational commitment (Onay, Deveci, & Kara, 2006; Öngel, 2014).

Research shows that profession seniority is not an important variable in organizational commitment and work engagement. This finding is not consistent with other studies. Profession seniority affecting commitment was revealed in many similar studies. The common idea is that profession seniority increases employees' organizational commitment level (Kılıç, 2008; Nartgün & Menep, 2010).

Research shows that teachers working between 11 and 20 years have a higher rate of work engagement. Teachers may become more experienced between 11 and 20 years. Integration rates could increase with self-confidence and speciality.

In addition, research findings indicate that work engagement is increasing with increasing age. Research, which was conducted in five countries, shows that old workers' job satisfactions is higher than young workers' job satisfaction (Davis, 2004).

The results of this study confirm that old teachers' organizational commitment level is higher than young teachers' organizational commitment level. Organizational commitment increases with age. Normative commitment is the most important commitment here. Kurşunoğlu, Bakay and Tanrıögen (2010) found Normative commitment is the highest dimension in their study too. Research shows that the period of being in the same school does not cause differences in work engagement and

organizational commitment. Teachers who work more than 6 years are vigor, dedicated and happy about being part of a school in work engagement; but teachers who work between 1-5 years have a higher level of organizational commitment than teachers who work more than 6 years.

The research shows that there is a positive and medium level relationship between job satisfaction and organizational commitment. This result is compatible with related literature. Teachers who have a high level of organizational commitment have also a high level of work engagement level. In other words, organizational commitment and work engagement determine each other.

As a result, teachers' suggestions and remarks should be considered, while their prestige should be increased to increase their work engagement and organizational commitment. In addition, education system should provide much more opportunities to teachers to expose their performances.

To conclude, the purpose of this study is to show the instructors' the views, who work in the primary, middle or high school of a town in Turkey, about their work engagement and organizational commitment. In future studies, different types of schools (public/private) or different levels of schools (primary/middle/high) may be used in a comparative way. A qualitative study or a mixed study can also be conducted.

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## **10.4. Developing Pedagogical Content Knowledge (PCK) in primary teachers: The introduction of an explicit PCK course**

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### **Abstract**

*This research focuses on four primary teachers' PCK development which takes place in a professional development course. Initially, we present the theoretical part of the course, namely: (i) the explicit introduction of PCK components and (ii) teachers' engagement in an inquiry Teaching-Learning Sequence (TLS) concerning Nanoscience and Nanotechnology (NanoST). In addition, in the practice part teachers designed and implemented two TLSs in real classrooms. Furthermore, we present and discuss results of an investigation of how this professional development course affected the teachers' PCK. The results revealed teachers' PCK development concerning their Pedagogy, Content and Context knowledge.*

**Key-words:** Explicit PCK introduction, in-service primary teachers' course

### **1. Focus of the study**

This study is part of a Project named "Science Teacher Education" (STED), which is partly funded from the European Commission and Greece through the *Aristeia II* Action, aiming to investigate how teachers in the compulsory education extend their teaching views and practices by adopting and designing inquiry based Teaching TLSs (Tiberghien, Vince, & Gaidioz, 2009). This research, particularly, focuses on four primary teachers' PCK development. In the context of STED, initially primary teachers participated in an educational course based on the PCK and NanoST content. In the next phase, they designed a new revised TLS about NanoST in order to implement it in their own students. In this paper, we aim to describe our research method in detail and present the development of primary teachers' PCK components throughout the project.

### **2. Orientation of the research**

The theoretical context of this study is based on the well-documented consideration that the development of PCK is considered to be a main goal of teacher education, since PCK includes teachers' understanding of how students learn specific subject matter (Van Driel & Berry, 2012). Additionally, the explicit introduction of PCK to teachers has been recently introduced raising further questions to the related research area (Loughran, Mulhall, & Berry, 2008). As far as the explicit PCK introduction is concerned, in the research review we recognized two trends: the first one is through

Content Representations (CoRes) (Hume & Berry, 2011; Loughran et al., 2008) and the second one is through a PCK model. We followed the second trend. As far as the CoRes is concerned, we used it as a research tool, which we will present in a next section. In the PCK model followed there are three overlapping circles representing Pedagogy, Content and Context. There are overlaps between two circles that indicate the interplay between the two components, while the PCK is designated as the overlap of all three circles (Otto & Everett, 2013) (figure 1).

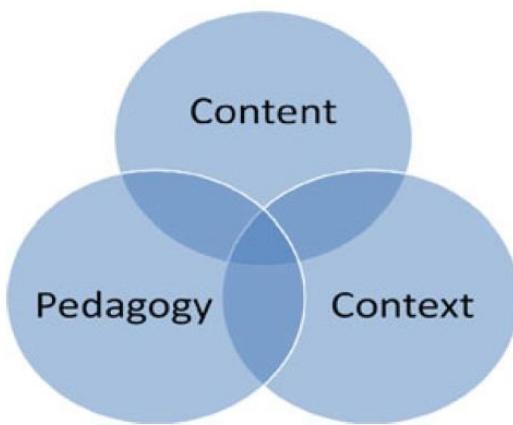


Figure 1: Three-circle Venn diagram of PCK based on Otto & Everett (2013)

As far as the PCK components are concerned, Pedagogy involves the knowledge of main teaching strategies, for example, hands-on activities and inquiry learning experiments. Content knowledge refers to learning objectives, for example, concepts and phenomena of Science. Finally, Context knowledge refers to the description of class and school environment, for example, the resources needed and time management (Otto & Everett 2013).

### **3. Outline of the project: theoretical and practical phases**

In the first phase (of the total five phases) of the project an educational course took place which combines an Inquiry-based TLS<sub>1</sub> for the instruction of NanoST content along with the explicit introduction of PCK. The course lasted 7 weeks (21 hours), (table 1). In table 2, we present specific characteristics of the educational course in detail.

During the second phase of the project the primary teachers talked with the researchers about: a) the difficulties they faced during their education (e.g., difficulties concerning understanding of the NanoST content or the inquiry method) and b) all the possible modifications they could make in order to implement a revised TLS in their class (e.g., teachers modified the educational materials of TLS<sub>1</sub>, such as videos and worksheets. There upon, the teachers implemented a new TLS<sub>2</sub> to their pupils.

**Table 1**  
*Outline of the Project*

Phases	Duration	Structure and content of the project
1 <sup>st</sup>	21 hours	Educational Course implementation: explicit introduction of PCK in combination with the teaching of NanoST content.
2 <sup>nd</sup>	10 hours	Design and Implementation of TLS <sub>2</sub>
3 <sup>rd</sup>	3 hours	Teachers' reflection on experienced elements of PCK components
4 <sup>th</sup>	6 hours	Design and Implementation of TLS <sub>3</sub> related to Material Science content
5 <sup>th</sup>	3 hours	Teachers' reflection on experienced elements of PCK components

**Table 2**  
*The Educational Course*

NanoST TLS <sub>1</sub>	Explicit Introduction of PCK
<ul style="list-style-type: none"> <li>• Inquiring macro, micro and nano-world</li> <li>• Nano-objects: DNA, virus</li> <li>• Lotus effect</li> <li>• Optical and electron microscope</li> <li>• Models and modeling</li> </ul>	<ul style="list-style-type: none"> <li>✓ discrete components: Pd, Cn &amp; Cx knowledge</li> <li>✓ components' interactions: Cn/Cx, Cn/Pd &amp; Cx/Pd</li> <li>✓ PCK definition through the use of a Venn diagram</li> <li>• Reflection about the experienced PCK components and interactions amongst them during sessions of the 1<sup>st</sup> phase</li> </ul>

Note: Pd=Pedagogy, Cn=Content, Cx=Context

The third phase of the project concerned the teachers' reflection on a) PCK discrete components regarding the difficulties they experienced during implementation of TLS<sub>2</sub> (e.g., the NanoST concepts considering the Content knowledge component and b) PCK components' interplays they have experienced during implementation of TLS<sub>2</sub> to their pupils, such as students' conception on nanoscale regarding the Content/Context interplay.

Throughout the fourth phase teachers were asked to design and implement a new TLS, named TLS<sub>3</sub>, concerning concepts and phenomena of the Materials Science scientific area, that is density of materials, mass and volume of objects. Teachers had reflective discussions with the researchers about the new TLS<sub>3</sub> without any concrete guidelines by them.

Finally, in the fifth phase teachers were asked to reflect on a) PCK discrete components concerning TLS<sub>3</sub>, for example, the teaching strategies that could be applied and b) PCK components' interplays they have experienced during implementation of TLS<sub>3</sub> to their students (e.g., paradigms that could help students understand the concept of density which concerns the Pedagogy/Content interplay).

## 4. The method

### 4.1. The research question

With regard to our study, the research question is formulated as follows:  
How did the primary teachers' PCK develop during the educational program?

### 4.2. The research phases

In Table 3 we incorporate the educational as well as the research phases of the program. Multiple sources of data were used through the stages of the research including a questionnaire, classroom observations, semi-structured interviews and the

researcher's notes (table 3). In this paper we present results from a tool named CoReS that we implemented in the beginning and in the end of the program.

**Table 3**  
*The Research Phases along with the PCK Course and Data Collection*

Research Phases	Explicit PCK Course	Data collection and sources
First Phase	Introduction to PCK: components and the integration among them	✓ Pre CoRes ✓ Semi structured interview 1 ✓ Classroom observation 1 ✓ Researcher's notes
Second Phase	Design and Implementation of TLS <sub>2</sub> related to NanoST	✓ Semi structured interview 2 ✓ Classroom observation 2 ✓ Researcher's notes
Third Phase	Teachers' reflection on experienced elements of PCK components	✓ Researcher's notes
Fourth Phase	Design and Implementation of TLS <sub>3</sub> related to Material Science	✓ Semi structured interview 3 ✓ Classroom observation 3 ✓ Researcher's notes
Fifth Phase	Teachers' reflection on experienced elements of PCK components	✓ Post CoRes ✓ Researcher's notes

#### **4.3. The research tool**

It's widely accepted that the complexity of teachers' knowledge cannot be captured by a single instrument. In this paper we present data derived from a questionnaire that was based on a tool well known as Content Representations (CoRes) (Loughran, Mulhall, & Berry, 2004). CoRes display science teachers' understanding of particular aspects of PCK, namely an overview of the main ideas of the teaching topic, knowledge of alternative conceptions along with specific ways of assessing students understanding. The horizontal axis of a CoRes contains the 'Big Ideas', which refers to the science ideas that the teacher(s) see as crucial for students to develop their understanding of the topic. There is no defined number of big ideas. The big ideas are then probed and quizzed in different ways through the prompts that are listed on the left hand side vertical axis of the CoRes, so that specific information about the big ideas that impact on the manner in which the content is taught can be made explicit. In order to serve the purpose of the STED program we revised CoRes by adding one new question, the 7<sup>th</sup> one (table 4).

**Table 4**  
*The Research Tool*

Questions	Big Idea “A”	Big Idea “B”
<ol style="list-style-type: none"> <li>1. What you intend the students to know about this idea?</li> <li>2. Why it is important for students to know this?</li> <li>3. What else you know about this idea (that you do not intend students to know yet)?</li> <li>4. Difficulties/limitations connected with teaching this idea</li> <li>5. Knowledge about students' thinking which influences your teaching of this idea</li> <li>6. Other factors that influence your teaching of this idea</li> <li>7. Which activities and paradigms do you intend to use for teaching this idea?</li> <li>8. Teaching procedures (and particular reasons for using these to engage with this idea)</li> <li>9. Specific ways of ascertaining students' understanding or confusion around this idea (include likely range of responses)</li> </ol>		

Teachers' had to answer in the questions of CoRes on a specific content of Materials Science, that is density, mass, and volume.

#### **4.4. Participants and the method analysis**

The participants were four in-service primary teachers (one male and 3 females). Two of them had over 20 years of experience, one had 17 years and another 6 years of experience.

We utilized a content analysis method (Smith, 2000). Our method has a twofold character, since we implement a deductive approach to generate the categories and subcategories and an inductive method to enrich subcategories. Firstly, in order to form the categories, we took into account two related research proposals (Otto & Everett, 2013; Park & Chen, 2012). More specifically, Otto and Everett (2013) introduce seven categories that reflect the PCK discrete components and all possible interactions among them: Pedagogy, Context, Content, Pedagogy/Context, Pedagogy/Content, Content/Context and PCK. Based on Park and Chen (2012), we formed the initial subcategories. Park and Chen (2012) suggest that PCK is the integration of five components: Orientations toward Teaching Science, Knowledge of Students' Understanding in Science, Knowledge of Science Curriculum, Knowledge of Instructional Strategies and Representations, and Knowledge of Assessment of Science Learning.

Secondly, we continued with an inductive analysis, namely, departing from our data we enriched the former subcategories and developed new ones. Table 5 displays all categories and the explanations for the verification of their existence in the data.

Last, we defined that a Coding Unit (CU) is a part of speech that answers the given CoRes' question (Cohen, Manion, & Morisson, 2008). For example, Content knowledge category was evident when teacher discussed learning objectives or Pedagogical knowledge was evident when teacher described teaching strategies (table 5). For example:

“There aren't any optical microscopes in my school”, is a CU that highlights teacher's Context knowledge.

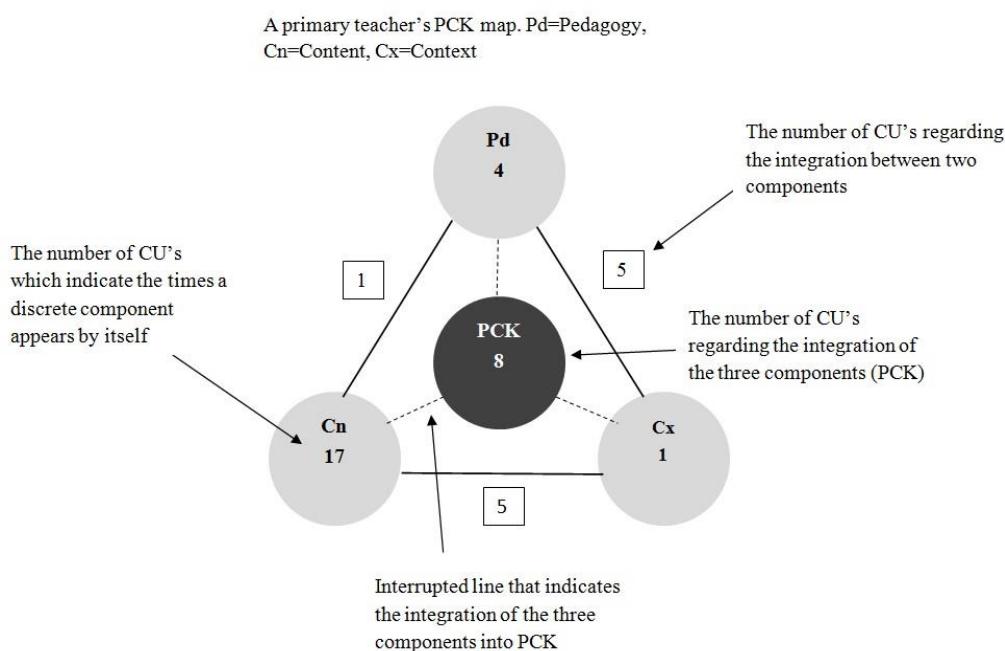
“I will use the project method to teach”, is a CU that highlights teacher's Pedagogy knowledge.

**Table 5**  
*Categories and their Explanations for the Data Analysis*

Category	Evident when teacher
Pedagogy	-Describes teaching strategies
Content	-Discusses learning objectives
Context	-Discusses about time constraints or makes descriptions of class and school environment
Pedagogy/Content	-Uses an example that highlights the alignment of appropriate teaching strategy with content
Pedagogy/Context	-Discusses about resources needed to support the activities that have been selected
Content/Context	-Discusses about a specific student's misconception concerning a science concept
PCK	-Discusses resources available to support a specific strategy for teaching a specific concept

#### 4.5. The data presentation tool

After reaching consensus, we formulated *PCK maps* in a way similar to that Park and Chen (2012). In figure 2, we explain the *PCK map*. We have four circles to represent Pedagogy, Content, Context and PCK. We also have three lines that represent the integration between two components: Content/Context, Pedagogy/Content and Pedagogy/Context (figure 2).



*Figure 2: The data presentation tool is the PCK map modified from Park and Chen (2012)*

In order to decide whether PCK developed or not and to what extend it has developed, we defined the following criterion. If X is the number of the circles that CUs have increased and Y is the number of lines that CUs have increased, we recognize three categories of the primary teachers' PCK development (table 6). We consider PCK development to be high if the X percentage increases between 75% and 100% and Y percentage increases between 66.66% and 100%. A teachers' PCK development is

medium if the X percentage increases between 25% and 50% and Y percentage increases 33.33%. Finally, a teachers' PCK development is low if neither X nor Y percentage changes (table 6).

**Table 6**  
*Categories for Teachers' PCK Development*

High PCK development	Medium PCK development	Low PCK development
X=3 or X=4 Y=2 or Y=3	X=1 or X=2 Y=1	X=0 or/and Y=0

## 5. Results

As table 6 shows, the number of CU's in primary teacher 1 (PT1) has increased in three circles of the PCK map and in all three lines. In Teacher 2, the CU numbers increased in three circles and two lines. In teacher 3, the CU numbers increased in two circles and in no lines. Finally, in Teacher 4, the CU numbers increased in two circles and in one line. According to the criteria we presented, teachers 1 and 2 showed high PCK development, teacher 3 showed low PCK development and teacher 4 showed medium development (table 7).

**Table 7**  
*Primary Teachers' PCK Development Results*

Number of circles	PT1: High	PT2: High	PT3: Low	PT4: Medium
3	x	x	-	-
2	-	-	x	x
Number of lines				
3	x	-	-	-
2	-	x	-	-
1	-	-	-	x
0	-	-	x	-

Also, as table 8 indicates, in three out of four teachers the CU numbers increased in Pedagogy, Context, Pedagogy/Content and Content/Context. Pedagogy/Context increases in one out of four teachers.

**Table 8**  
*Number of Teachers that Showed Increase in Coding Units*

Category	Number of teachers
Pedagogy	3
Context	3
Content	2
Pedagogy/Context	1
Pedagogy/Content	3
Content/Context	3
PCK	2

## **6. Discussion- Future research**

This study aimed to examine how four primary teachers' PCK developed during a professional development course, which included explicit PCK introduction. The comparison of the PCK maps indicated that two teachers showed high PCK development, one showed low and one showed medium PCK development.

Also, the most experienced teachers showed the highest PCK development. Additionally, in three teachers the number of CU increased in Pedagogy, Context, Pedagogy/Content and Content/Context. However, only in one teacher the number of CU increased in Pedagogy/Context interplay. As a consequence, we consider that changes in educational materials should be made for the next implementation of the course in order to promote development of Pedagogy/Context interplay (e.g., incorporation of new materials related to this interplay in order to support teachers' reflection). We are also going to answer this question: "Does the development of primary teachers' PCK depend on their professional experience?"

Our next step is the secondary analysis of the data in order to provide us qualitative information concerning the development of primary teachers' conceptions about inquiry TLSs.

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## **10.5. Professional standards for teachers in a Universal Design for Learning framework. Promoting a data literate and reflective teacher culture in Greek elementary schools**

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### **Abstract**

*In order to raise achievement for all students in a Greek elementary school struggling to be inclusive, attempts are being made towards empowering teachers through short term in-service training programs. In the in-service training program described, a school advisor collaborates actively, as a designer and facilitator, with teachers who are responsible for data collecting and being reflective practitioners. The program involves teaching and learning writing skills and promoting student understanding in mathematics. The three-school-year program's main goal is the promotion of teacher professional standards within a Universal Design for Learning (UDL) -like a framework with an emphasis on data and reflection.*

**Key-words:** Inclusive school, school advisor, teacher culture, professional standards, Universal Design for Learning (UDL)

### **1. Introduction**

Education for all means ensuring access to good quality basic education for all children. Quality in education entails a school system where diversity and flexibility are seen as important ingredients for all learners' development and personal growth. Quality education is, therefore, education that is inclusive and stresses the importance of identifying strategies for overcoming or eliminating the barriers to full participation for individuals, who experience discrimination, marginalization and exclusion or are particularly vulnerable (UNESCO, 2005).

Inclusion has its origins in special education. Special education was considered to be a supplement to general education provisions, while, in recent years, its appropriateness has been challenged. The main problem is the fact that the shift had not been accompanied by changes in the organization of the general school. This lack of organizational change is one of the major barriers to the implementation of inclusive education policies. School needs to be reformed and pedagogy needs to be improved in ways that will lead them to respond positively to pupil diversity. According to UNESCO, reforming school systems to become inclusive is mostly about changing the culture of classrooms and schools. These change processes towards inclusion often involve overcoming obstacles, such as existing attitudes and values, lack of understanding, lack of necessary skills, limited resources and inappropriate organization (2005).

Merely providing students with disabilities access to general education programs does not ensure their full acceptance within these settings or guarantee meaningful participation or comparable outcomes. General educators often feel ill-equipped to appropriately address students' needs with disabilities and prepare them for higher

standards and expectations (Imellou, 2003, 2011; Jiménez, Graf, & Rose, 2007). One way to move towards a relevant, balanced set of aims is to analyze the curriculum in terms of inclusion. Accessible and flexible curricula can serve as a key to creating “Schools for All”. Rose and Meyer (2002) in collaboration with colleagues at the Center for Applied Special Technology (CAST) developed a curricular framework for supporting learner variability known as Universal Design for Learning (UDL). UDL anchors existing and well-known practices, such as reciprocal teaching, cooperative learning and differentiated instruction, into a theoretical framework requiring teachers to anticipate in their instruction how activities and methods support multiple means of representation, expression and engagement. When UDL environments and products are not readily available, the principles of UDL can be applied to learning environments and instructional materials in the context of accommodations and modifications (Edyburn, 2005). When educators employ the UDL principles in the design and delivery of instruction, accommodations noted on individualized education programs for students with learning disabilities may more naturally occur in general education classrooms (King-Sears, 2009). UDL is a proactive strategy that helps teachers build differentiation into their lesson plans from the beginning providing the flexibility and accessibility needed to reduce the barriers for students with disabilities (Spencer, 2011). UDL is a means to personalized teaching and learning.

According to the Report of the Teaching and Learning in 2020 Review Group, personalized teaching and learning is a key educational priority for schools in the 21<sup>st</sup> century. Personalized learning is about focusing on each child’s learning in order to enhance progress, achievement and participation. All children have the right to receive support and challenge tailored to their needs, interests and abilities (Department for Education and Skills, 2006). Developing the school workforce must be informed by an understanding of the teachers’ skills that are particularly important for personalizing learning. Personalized learning requires a renewed focus on the values and skills of teachers with a particular emphasis on: valuing learner diversity, supporting all learners, analyzing and using data -with a specific focus on assessment for learning-understanding how children learn and develop, working with other adults, engaging pupils as active participants in learning, continuing personal professional development and being a reflective practitioner (Department for Education and Skills, 2006; European Agency for Development in Special Needs Education, 2012). Being a reflective practitioner at any stage of the teacher development involves a constant critical look at teaching and learning and at the work of the teacher. According to Harrison, there are five core competences for a reflective practitioner: observation, communication, judgment, decision-making and team working (2008).

With all these in mind, we designed an in-service training program, the goal of which is the promotion of teacher professional standards within a UDL-like framework with emphasis on data and reflection.

## **2. The in-service training program**

According to PL 4074/2012, Greece, as a State Party, has to recognize people’s right with disabilities to education. With the view to realizing this right without discrimination and on the basis of equal opportunity, Greece has to ensure an inclusive education at all levels, access to an inclusive, quality and free education on an equal basis with others and effective individualized support measures to maximize academic and social development, consistent with the goal of full inclusion.

In Greece, a country with scarce resources, the promotion of inclusive education has taken the form of converting special needs education schools into resource centers to

provide expertise and support to clusters of general education schools (UNESCO, 2005). The newly founded institutions of ‘Education & Support School Network (ΣΔΕΥ)’ and ‘Diagnostic & Educational Evaluation & Support Committee (ΕΔΕΑΥ)’ (PL 4115/2013), where and if they exist, support general education teachers differentiate the teaching-learning process by providing educational assessment, goals and guidelines. However, critical questions need to be asked. Is the special education personnel equipped, by definition, to support inclusive policies and practices in a general school that is uninformed and undereducated in inclusive education issues? Are general education teachers ready to implement differentiated instruction that has the form of guidelines, when and if they are available?

Every teacher’s behavior in the classroom is influenced by the existence of a cognitive map, a personal theory, which gives meaning to everything he does. Teachers’ beliefs –attitudes, knowledge and skills- guide their practices in the classroom (Imellou, 2003). Greek general education teachers’ perceptions about ‘School for All’ issues have been the focus of various studies. In these studies, emphasis is put on: (a) an adapted, in Greek reality, set of teachers’ professional standards and (b) UDL and personalized teaching and learning issues (Imellou, 2011, in press-a; Imellou & Charouppias, 2015). We quantified general education teachers’ perceptions about their attitudes, knowledge, skills and practices, after we adapted the professional standards presented by the Council for Exceptional Children (2009) in Greek reality. The result was that the teachers’ profile of strengths and weaknesses concerns one attitude, eleven areas of knowledge and fourteen skills (Imellou, in press-a). Greek elementary school teachers’ attitude seems quite positive: 60.38% of the teachers seem to think positively about the inclusion of students with learning difficulties. The general education teacher’s knowledge profile seems stronger concerning issues about the learning environment/social interactions and less strong concerning issues about instructional strategies. The general education teacher’s skills profile seems stronger regarding issues about the learning environment/social interactions and less strong concerning issues about instructional strategies and instructional planning. The general education teacher’s general profile seems stronger concerning issues about the learning environment/social interactions and individual learning differences and less strong concerning issues about instructional strategies and instructional planning.

The enormous complexity of teaching, which requires integrating many kinds of knowledge and skills in making judgments and informed decision making about how to pursue multiple goals for learners who have diverse needs, promotes a strong emphasis on data and reflection. Theories of professional learning suggest that teachers need to do more than simply implement particular techniques; they need to be able to think pedagogically, reason through dilemmas, investigate problems and analyze student learning to develop appropriate curriculum for a diverse group of learners (Darling-Hammond, Hammerness, Grossman, Rust & Shulman, 2007). In order to empower the teaching personnel of our district in these particular areas, we designed an in-service training program, the duration of which was three school years: two years were devoted to writing (2013-14, 2014-15) and two years to mathematics (2014-15, 2015-16), with one year overlapping. Its content, process, context and results are as follows.

## **2.1. Content**

We tried to help teachers acquire or adjust a cognitive map of teaching that allows them to see relationships among specific domains of teaching knowledge –such as writing and mathematics- and connect useful theory to practices that support student

learning. We gave opportunities to review student work and obtain feedback on teaching. According to the U.S. Institute of Educational Sciences practice guide on how to use student achievement data to support instructional decision making, using data systematically to ask questions and obtain insight about student progress is a logical way to monitor continuous improvement and tailor instruction to each student's needs. In our in-service training program we focused on three of the five proposed recommendations: (a) we made data part of an ongoing cycle of instructional improvement, (b) we showed teachers how to teach students to examine their own data and learning goals and (c) we provided support that fosters a data-driven culture within the school (Hamilton, Halverson, Jackson, Mandinach, Supovitz & Wayman, 2009).

### **2.2. Process**

The learning process refers to the extent to which the curriculum builds on and enables teachers' readiness. The processes of modeling and demonstration, scaffolding, making thinking visible and practising with coaching were essential. We used four out of five core competences for a reflective practitioner, according to Harrison (2008): (i) communication, (ii) judgment, (iii) decision-making and (iv) team working putting emphasis on collaborative practitioner enquiry and collective action research. Before conducting the collective action research in writing and the collaborative practitioner enquiry in mathematics, teachers participated in seminars about each subject that consisted of theoretical sessions and also workshops.

### **2.3. Context**

The learning context refers to the extent to which teacher learning is situated in contexts that allow the development of expert practice. Such contexts include both subject matter domains and a community of practitioners. In our in-service training program the subject matter domains were two: writing and mathematics. Teachers from different schools but from the same school grade participated as groups, shared practices, dispositions and a growing base of knowledge. To address learning problems, teachers tried to deeply understand the common challenges and misconceptions learners often face in learning their subject.

### **2.4. Results**

As a result, in the writing component of the in-service training program, teachers reflected on student work and teaching practices both individually and collectively. They collectively chose criteria by grade and assessed their students' achievement by using them. In this process, teachers could share the information with their students, making them active participants in their learning. They monitored students' work by using a protocol designed by the first author. Teachers intervened in their classrooms and monitored their intervention. They gave data that they were processed by the first author. There were classroom-level results, student-level results and district-level results. At the end of the first and at the beginning of the second school year of implementation of the writing component of the in-service training program, five teachers volunteered twice to present the results of the collective action research concerning their grade in the community of teachers. We used two schemas: (a) a district-level schema with one large group of 120 teachers and (b) a grade-level schema with five groups of approximately 20 teachers each.

In the mathematics component of the in-service training program, teachers experienced themselves problem solving situations and reflected on them both individually and collectively. They reflected on student work and tried to analyze

students' thoughts that occurred when students were solving a problem. They reflected on teaching practices, particularly, on how to react to students' mistakes. Teachers reflected on the development of every student's understanding in mathematics focusing on how to help learners build mathematical concepts and ideas. This school year teachers are monitoring student work in mathematics. They will intervene in their classrooms and monitor their intervention. Finally, they will give data concerning the students' understanding of mathematics to be processed by the primary education school advisor and will be given feedback on it.

During the in-service training program that is still in progress, all teachers participated in their grade groups in some degree of passive-active participation. All of them listened, but not all of them were engaged actively. More than 50% of the teachers in every group gave their data to process. There was no triangulation of the results, while we do not know if teachers replicated the enquiry in writing and/or in mathematics or if they transferred their knowledge to some other school subject.

### **3. Discussion**

Although the results of the described on-going in-service training program seem to be positive and teachers seem to acknowledge its importance for the effectiveness of their practice in the classroom concerning their diverse learners, this in-service training program constitutes only one attempt with a local character. Encouraging change in schools is often a difficult endeavor given various challenges including a lack of general capacity to initiate, develop and sustain change efforts. The 'School for All' is a goal, the achievement of which requires the synergy of various factors. For the realization of the 'School for All' we suggest:

A. Implementation of a UDL framework when designing or redesigning curricula for every school subject/academic domain putting emphasis on: (i) multiple and flexible means of data representation, (ii) multiple and flexible methods of students' actions and expression and (iii) multiple and flexible choices for student commitment. We suggest the redesigned curricula have diversity as a starting point and emphasize multimodality and differentiation (Rose & Meyer, 2002). In this way, the general education teacher will be able to make positive, functional and dynamic use of every student's strengths in a diverse classroom.

B. Systematic differentiation of the teaching-learning process focusing on the instructional design and the selection of the appropriate teaching strategy and goals the personalization of the teaching-learning process and the design of positive for every student learning environment.

C. Systematic lifelong teachers' in-service training in order to make possible to address their professional needs that are based on their role description and professional standards putting emphasis on data and reflection (Imellou, in press-a; Imellou, in press-b; Imellou & Charoupias, 2015).

When communities can hold teachers, administrators and government officials accountable for the inclusion of all children through formal institutional mechanisms, community members become more interested in school improvement and more willing to commit their own resources to the task (UNESCO, 2005).

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## **10.6. Soft skills identification for guidance and job placement**

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### **Abstract**

*Recognition, validation and certification of skills, especially those developed in non-formal and informal fields, is becoming a current topic for all educative institutions. This paper represents a good practice at the University of Macerata (IT) in the field of soft skills assessment. The aim of the project named “Unimc for Soft Skills” was to give feedback about the soft skills they possess to students coming from the secondary school and participating in the experience of work-based learning at the University. A list of characteristics for each chosen soft skill was designed as well as reliable procedures for soft skills assessment.*

**Key-words:** Soft skills, lifelong learning, informal learning, non-formal learning, guidance, job placement

### **1. Introduction**

Over the last years the European policy for training has operated a progressive change of direction paying more and more attention from the traditionally adopted education levels to the skills (Isfol, 2012). Recognition, validation and certification of skills, especially those developed in non-formal and informal fields, is becoming a current topic for all educative institutions, including University. This approach has been included in the set of policies 2020 (European Commission, 2009, 2012) and is one of the new paradigms of reference for all Countries members. The awareness that the availability of a wealth of skills is a prerequisite for the Economic growth is, therefore, now widespread internationally. However, there are still many weaknesses: study programs in Europe are mainly rooted in the traditional teaching-learning method with a focus on the contents to be learnt. Soft skills are not valued enough in the curriculum while they have a great value in the labor market (Eisenreich, Loos, Tafforeau, Veltscheva, Dobra, Berkova, 2002). Teaching is not enough in this field: an appropriate environment is required to develop this kind of competence, such as soft skills. Extracurricular activities ranging from volunteering, culture and arts to sport and leisure activities help develop soft skills and nurture talents. A strategic action would be to take

into consideration the reality outside the school and the University adapting the training provided to the demand of daily life.

The University of Macerata (UNIMC) has been involved for a long time in the field of soft skills training, developing informal and non-formal learning activities, then experiencing a system to recognize and validate them in the last period. This system can be applied to the secondary school to support young students both in the field of guidance and job placement.

## **2. Soft skills: Providing a definition**

The skills are the result of a series of learning processes, formal, informal, acquired in different contexts and at different stages of the life cycle. In the research field two main different types of skills are distinguished: hard and soft skills.

Hard Skills are technical requirements related to a specific task. There is a long tradition in their teaching process, as well as in their evaluation and assessment both at school and in higher education.

Soft skills are considered to be a psycho-sociological cluster of personality traits, social proprieties, communication, language, personal habits, and friendliness that characterizes relationships with other people (Le Boterf, 1994). Soft skills are personal attributes that enhance individual's interactions, job performance and career prospects. Unlike hard skills, which are specifically related to a specific task or activity, soft skills are related to the personal abilities to interact effectively with coworkers and customers and are broadly applicable to different kinds of performances both in and outside the workplace (Rey, 2003). Transferability is the main difference: a soft skill is more transferable than a hard skill so that they can effectively support employability.

The rapid obsolescence of hard skills enhanced the importance of soft or "key" skills, suitable for industries, organizations, professions and different productions (Ryken & Salganik, 2003). Due to their added value, it is important to identify them and certify that they are available to be used. At the same time, as they are 'soft' for definition, they are difficult both to define and assess.

The UNIMC has been involved in the field of soft skills training for a long time, such as: effective communication, teamwork, conflict management, negotiation, problem solving, etc. (Nicolini & Pojaghi, 2006). According to the Italian and European legislation, in the last period a Pilot Project aimed to the recognition, validation and certification of soft skills was made up. We will discuss the contents, the phases, the results and the issues of this experience.

## **3. The Pilot project "Unimc for Soft Skills"**

Along several years the UNIMC has been participating in the Project Alternating School and Work, which is sponsored by the local Chamber of Commerce and the Regional Education Office. The Project usually involves Secondary School students in an internship at Public Administrations, Local Authorities and Professional Studies to promote the interaction between school and work (article 4 of Law No. 53/2003). A research team from the Orientation Office<sup>1</sup> introduced within Alternating School and Work a Pilot Project called Unimc for Soft Skills, which involved 12 students of a local Secondary School in the period between January and February 2014. The Project was

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<sup>1</sup> The research team was composed by: Prof. Paola Nicolini (Psychologist and Unimc Professor), Doct. Elisa Attili (Unimc Orientation Consultant), Doct. Carla Bufalini (Unimc Orientation Consultant), Doct. Monica De Chiro (Unimc PhD. Student), Doct. Valentina Corinaldi (Unimc PhD. Student), Doct. Cristina Formiconi (Psychologist and Unimc PhD. Student).

structured in five phases to recognize, validate and certify the soft skills likely acquired or consolidated during the internship by the participants.

### **3.1. Pilot Project first phase**

The first phase of the Pilot Project was dedicated to the identification of the targeted soft skills mainly required during the internship at UNIMC by the students. Allowing for the aim of the Alternating School and Work project we outlined four soft skills:

- Observation
- Active Listening
- Communication in small group
- Problem solving.

As a theoretical reference, the definition of the four soft skills employed in an experienced and knowledgeable way was used (Winterton, Delamare-Le Deist, & Stringfellow, 2005). A definition of an expert approach for each soft skill is provided below:

*Observation:* An expert approach in observation consists of being able to distinguish between data that can be directly observed in the description of a phenomenon - such as actions, words and non-verbal behaviors - and items that can only be deduced because belonging to the inner world of the subject observed - such as thoughts, feelings and intentions. Furthermore, the competent observer fits the times and places where the observation takes place taking care to discuss his/her own comments and being aware of his/her own point of view.

*Active Listening:* A good expertise in active listening is characterized by the ability to select among an amount of information the most significant ones in relation to the objective of communication and the speaker's intentions.

*Communication in small group:* An expert approach to communication in small group is distinguished by the ability to clearly express opinions and emotions, avoiding to minimize, trivialize or make fan of other's ideas and frames of mind and offering recognition and feedback to other's ideas. Furthermore, it allows to change his/her own attitudes based on the discussion in group.

*Problem solving:* Having a good expertise in problem solving means to be able to process the different information available to identify answers to the problems encountered, sometimes also in an original way. In addition, it permits to transfer learned strategies adapting them to new contexts. Finally, an expert approach is characterized by the ability to use an overview to take on the problem from an outside perspective.

### **3.2. Pilot project second phase**

Using the definitions described above, the second phase of the project consisted of the operationalization of the four targeted soft skills, declined them in three levels of expertise - basic, intermediate and advanced - through the identification of specific indicators (Nicolini, Moroni, & Lapucci, 2009).

As an example, we will illustrate the operationalization of the Communication in small group competence. In Table 1, the indicators which identify the communication in small groups at a basic and advanced level are illustrated (Nicolini & Bompuzzi, 2011).

**Table 1**  
*Communication in Small Group Indicators*

In small group basic communication	In small group advanced communication
To remain mainly silent during the discussion	To take an active part in the discussion
To carry on own opinion only at once considering the opinions of the other participants	To propose and stimulating speeches, listening and taking into consideration the opinions of the other participants
To intervene with speeches not actually relevant to the group objective	To return the discussion towards the group objective to be achieved
To use a personal language or technical terms, without checking whether they are comprehensible to the other participants	To use a shared linguistic repertoire
To minimize ideas or frame of mind expressed by the other participants	To offer recognition to the thoughts and frame of mind of the other participants
To maintain the same style of communication during the group interaction, without measuring it in relation to others	To change the way of relating based on the feedback received by the other participants
To keep the speech for a long time	To intervene synthetically and clearly
To interrupt others in their speeches	To encourage others to participate and to support them expressing their point of view

Following the operationalization showed in Table 1, the three competence levels of the Communication in small group skills are described, as in the following list:

- Basic: The student mainly uses the elements of a basic approach within the communication in small groups.
- Intermediate: The student uses the characteristics of both approaches in a mixed way within the communication in small groups.
- Advanced: The student uses all or most of the indicators of an expert approach within the communication in small groups.

### **3.3. Pilot project third phase**

In this phase, several tasks related to every skill were identified and, then, tested by the research team. This step involved the group of experts in a deep analysis of the different tasks to arrive at a shared and convinced choice of the activities to be proposed. We put together different tools normally used in this field in order to provide a hands on activity followed by self narrative assessments, peer to peer assessments, texts editing, questionnaires, participant observation. The tasks were partly provided in groups and individually. The research group tested and discussed every single activity until an agreement was reached on their reliability.

Two tasks for each of the four soft skills were selected to be used in two different moments, in entrance and exit assignments (Trinchero, 2013). The selection of the tasks able to ascertain the level of soft skills possessed by the students at the beginning and at the end of the experience was the crucial passage of the project. In fact, the two tasks selected for each of the soft skills need to be homologous but not completely identical to ward off a sort of "training activity" effect, instead of an actual recognition of the soft skills acquisition (Le Boterf, 1994).

As an example, we briefly illustrate the in entrance task for the Communication in small group skill. It consists of a discussion in small groups to reach a common solution to an assignment lasting for twenty minutes. After informing the group about the activity to carry on, the development of the discussion within the group was recorded

through a video camera. Simultaneously, two members of the research team took notes of the conversation and the exchanges within the participants through a checklist (Bresciani, 2012).

### 3.4. Pilot project fourth phase

In the fourth phase, the results of the proposed activities were analyzed by each expert involved in the soft skills survey, using the indicators identified for each soft skill. Subsequently, the whole group of experts shared the results and discussed all doubtful cases to arrive at a consensual assessment. In Table 1, the students' in entrance and in exit levels of expertise for each soft skill are illustrated.

**Table 2**  
*In Entrance and in Exit Students' Soft Skills Levels*

Stu d.	Observation		Listening		Communication in small group		Problem solving	
	entrance level	exit level	entrance level	exit level	entrance level	exit level	entrance level	exit level
1	basic	intermedi ate	basic	intermedi ate	basic	advanced	basic	intermedi ate
3	intermedi ate	advanced	intermedi ate	advanced	advanced	advanced	intermedi ate	intermedi ate
8	basic	intermedi ate	basic	intermedi ate	intermedi ate	intermedi ate	advanced	Advanced
9	Basic	advanced	intermedi ate	advanced	advanced	advanced	intermedi ate	intermedi ate
12	Basic	basic	basic	advanced	intermedi ate	advanced	intermedi ate	Basic
11	basic	intermedi ate	advanced	advanced	advanced	advanced	basic	intermedi ate
5	Basic	intermedi ate	basic	basic	basic	basic	intermedi ate	intermedi ate
7	intermedi ate	advanced	intermedi ate	intermedi ate	intermedi ate	intermedi ate	intermedi ate	intermedi ate
6	intermedi ate	intermedi ate	basic	basic	basic	intermedi ate	intermedi ate	intermedi ate
2	Basic	intermedi ate	intermedi ate	basic	intermedi ate	basic	intermedi ate	intermedi ate
4	Basic	intermedi ate	intermedi ate	basic	basic	basic	advanced	Advanced
10	intermedi ate	basic	basic	advanced	intermedi ate	intermedi ate	advanced	Advanced

Legend: green= evolution; blue: stable; yellow= regression; strikethrough=advanced level already in entrance

As Table 2 shows, all the 12 students improved their competences at least in an area, moving from basic or intermediate to intermediate or advanced level. In particular: One student shows a significant evolution in all four targeted skills, four students improved in two of them and seven students improved their competence in one of them.

Four students seem to have a regression: three students in one of the targeted skills, one in two of them. We can explain this results with at least two different hypothesis: a) it is possible that the four students were only partially or just a little motivated in the second data collection being in fact at the end of the experience; b) the task used to reveal their competence was not so sensible to small changes, such as those that can intervene between a basic and an intermediate level of competence. Anyway, if a

subject is able to carry on a performance at an intermediate level, it is sure that he/she owns and he/she has consolidated a basic level of the same skill.

The most significant changes were on two of the four targeted skills, that is to say in Observation and Listening; on the contrary, Communication in small groups and Problem solving appears to be the two areas with only a few considerable changes. Taking into consideration that all the participants were students, it is not surprising that they showed above all Problem solving good skills already in the entrance task, developed at an advanced level in the three cases; in fact, problem solving is one of the most requested skill in learning process at school, as well as communicating in small groups.

#### **4. Final remarks**

During the internship at UNIMC some soft skills were observed and assessed in a group of students coming from the secondary school. Sharing the results of the experience with the students and their teachers outlined a guidance value and an educational value. Through the feedback received on the assessment of their soft skills, the students deepened their awareness of their interests, attitudes having at their disposal data useful to consider in their personal and professional development. The students could also develop their soft skills experimenting in practice their competences and understanding the dynamics of the working life.

It will be essential to conceive a better connection between higher education institutions and schools to design and create learning environments favourable to the acquisition of soft skills, as the demand for higher level of competences is expected to grow further in 2020. Education systems should be committed to raising standards of quality in the subject of training the students to the requests of the labour market. In this field, teachers from all the school levels should be trained to develop a sensibility to these topics.

Providing a certificate with the soft skills acquisition declaration, the illustrated project reinforced UNIMC commitment to promote the development of non-formal and informal learning. the University of Macerata intends to intensify its role in this area next year. The aim is to structure a stable system of recognition, validation and certification of soft skills acquired in each informal and non-formal experiences offered by University launching specific agency.

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## **10.7. Teachers' professional development in Greece: An open and flexible learning environment or a confined and rigid education system?**

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### **Abstract**

*This study examines the environment for further training which is emerging in the field of secondary education in Greece by examining emails received. In particular, it examines the providers and the recipients of training opportunities, the various forms, the content, the methods used, the duration, certification, funding, the type of learning taking place and their dependence on the Ministry of Education. According to the results of the study, it has been established that teachers are called upon to deal with a completely new learning environment which is not only open, flexible and multiform but also decentralised and autonomous functioning in accordance with free market concepts.*

**Key-words:** life-long, open and flexible learning environment, autonomy

### **1. Introduction**

Examining the relationship between educational reform in the USA and the professional development of teachers, Bredeson (2009) argues that professional development is used as a policy tool in the realisation of changes in educational practices, which constitutes a powerful strategy in accomplishing the necessary changes to cope with the pressing challenges faced by state education. Likewise, the developments which have been seen in the field of educational policy in Greece over the last few decades are part of a wider redesigning of educational objectives and practices both in Europe and worldwide, which, in turn, are exerting intense pressure on national educational policy. The open, multiform, flexible, autonomous, life-long learning environment which constitutes the proposed model for educational policy today also involves teachers' training and establishes a new environment of professional development.

These changes are linked not only to orientation, principles, standards regarding the content of the studies (e.g., cross-curricular), the teaching (e.g., practical-investigative), the methods (e.g., collaborative) of the educational system but also to the role of the teacher, which results in changes in their training. According to the European Commission paper "Rethinking Education: Investing in skills for better socio-economic outcomes" (2012), the general framework for the teacher's new role is that education is transformed into learning in the new educational environment. Knowledge of a subject is no longer the issue but refers to continual and lasting changes in teaching and the establishment of new learning environments. Therefore, in order to achieve greater effectiveness in teaching, schools should increasingly become more autonomous and open learning environments; as a result, teachers should become more accountable

regarding not only the content but also the organisation and the monitoring of the learning process.

Thus, teacher training is evolving into personal professional development over the course of a teacher's career through:

- access to opportunities for continual professional development
- the creation of flexible learning paths
- development of open education and e-learning
- branching out into non-formal and informal forms of learning
- use of new teaching and learning technologies from educational and research institutes and other providers
- creation of networks for innovation at both a local and regional level
- activities for the development of all the educational staff
- individualised programmes “any time and at any place”

All the above changes are scheduled to be implemented and are safeguarded by Law 3879/2010: The Development of Life-long Learning. To be more specific, according to this law, all kinds of learning activities undertaken during a person's life are recognised.

## **2. The Study**

The aim of this study is to investigate, record and analyse the changes which have been observed in the field of teachers' training and professional development in secondary education with regard to training activities and suggestions received by schools through the school email. In order to conduct this research, content analysis was applied, a method frequently used in educational research. 526 emails sent to the 2<sup>nd</sup> High School, Kiato, Korinthia from the beginning of the school year (September 2012) to February 2013 were used in this research.

The following research questions are posed:

- Which providers are involved in the professional development of teachers today, what form do the training activities take and who do they cater to?
- What trends can be observed regarding the content, the methods used and the duration of the training?
- What incentives are there for participation?
- Are the boundaries between the different forms of learning diminishing?

## **3. Presentation and analysis of the results**

According to the findings of the study, the suggested training activities involve four different categories of people: the providers, those collaborating with them, the recipients of the emails regarding the activities and those who participated in them. One common characteristic which all of the above categories exhibit and is a relatively new phenomenon in the field of education in Greece is their wide variety and scope.

Take the training providers, for example, where an increase not just in number but also in the range of different types of provider is clearly evident. Every month these providers are active on average 20 times. Training can be provided by individuals (e.g., teachers, teacher adviser, university professors) but also institutions (e.g., federations, schools, science unions), public sector organisations (e.g., ministries, administrations, etc) and private ones (e.g., foundations, private companies, publishers), national providers as well as European or global ones, institutionalised providers (e.g., Regional Training Centres, Institutes of Higher Education, teacher advisers) and non-institutionalised ones (e.g., foundations, associations etc), providers of formal, non-formal and informal learning. The more traditional providers (e.g., Regional Training

Centres) are becoming less evident, giving way not just to teacher advisers, who are exhibiting increasing activity in this area, but also the Ministry of Education, the Directorate of Secondary Education, the Science Union and universities, while simultaneously new providers of informal learning (e.g., associations, foundations, museums, non-profit organisations) are making their appearance. The provision of activities by the public sector is more limited for most of the months in comparison with the private sector, which has recorded an increase. Therefore, there is a distinct fragmentation and decentralisation of the providers involved, resulting in a gradual shift from centrally controlled learning programmes to more independent and autonomous ones.

Furthermore, training programmes are evolving into collaborations, as 22% involve cooperation between different providers, universities, followed by science unions and then international organisations, all of which give prestige and credibility to the specific programmes. Collaboration between two different types of provider are particularly noticeable: for example, a university with a science union, a school with a non-profit organisation, or private with public sector organisations, resulting in coexistence, interdependence and the erosion of the dividing lines between public and private sector providers of training, institutionalised and non-institutionalised.

The variety of recipients of the suggested activities are also widening in scope as almost 80% of the programmes cater to all areas of expertise, which is shaping the teachers' new identity today. No longer will scientists or experts be specialised in a particular field of knowledge but rather "managers" and "mediators" of knowledge, a phenomenon which is leading to deprofessionalisation. Therefore, the erosion of specialised knowledge provided is evident in most fields except for the following three: Philology, Physics and Information Technology. Training programmes are not associated with specialised knowledge but with general skills and general subjects mainly of a practical nature, resulting in a gradual elimination of divisions between specialised fields and the deterioration of professional identity. This also reduces the responsibility for the quality of the scientific or specialised knowledge provided to the students.

Finally, the range of participants in further training programmes has also increased as in a large proportion (40%-47%) of cases both students and teachers are simultaneously involved in the process of knowledge management, establishing a new educational and teaching environment (the diminishing of boundaries, elimination of authority, a spirit of cooperation, investigative learning).

All kinds of learning activities are recognised, which broadens the spectrum with regard to the forms of suggested training activities, reaching 37 different forms recorded. Most providers conduct their activities using an increasingly wider variety of forms, thereby making it possible not only for the providers to organise activities but also for the recipients to attend, depending on feasibility issues and their own specific objectives. Simultaneously, it meets the requirements of life-long learning and provides many different and more flexible learning pathways. The dominance of certain new forms of training is also worth noting. Learning via the Internet takes the first place with a proportion of 19%, followed by educational programmes with 12% and competitions being in the fourth place with 7%, as compared with more traditional forms, for instance, short seminars being in the third place and longer all-day seminars in the sixth place, which relate to non-formal and informal forms of learning, the former with a proportion of 58% and the latter with a proportion of 39%. These types of learning are, therefore, most frequently used by providers, rendering it absolutely necessary for formal, non-formal and informal teacher training to be brought together

and provided with some kind of recognition as 54% of the activities offer no official acknowledgment or recognition of participation.

The current trends regarding content, methods and duration were also reflected in this study. When the suggested training activities are, as previously mentioned, largely aimed at all fields of study, it follows that subjects of general interest will dominate, in this case, with a proportion of 54% (subjects referring to public health, culture, sport, environment, promotion of entrepreneurship and innovation, collective activities etc). This was followed by subjects related to teaching (27%), as they meet the requirements of the new education policy, so that modern societies can respond to the “economy of knowledge”. The recording of the above trends regarding the content of the training activities reveals that education is becoming learning, scientific knowledge is being replaced by general knowledge, scientific value by technocratic ones (teaching skills). The aim is the shaping of well-rounded personalities with critical thinking, creativity, initiative, flexibility, team spirit, whereby a gradual recession from traditional expository methods is achieved and new methods are adopted, involving more participation and e-learning. Suggested training activities involving e-learning, in particular, have exhibited an upward trend, which meets the requirements of not only the official education policy but those participating in further training as well, by providing flexible and adaptable training programmes at a low cost.

Approximately 60%-70% of the activities are of short duration which means that less time is required to organise them and a wider variety of subjects can be covered; adapting to new circumstances is quicker, easier and more economical.

According to Neave (1998), the demand for the state to waive some of its jurisdiction and consolidate the autonomy of schools and thereby that of the teachers constitutes one of the most significant developments of recent decades. This is evident in the study in question, as 44% of the suggested training activities had direct access to schools through email and were not preceded by the approval or intervention of the Ministry of Education or the Directorate of Secondary Education. “The realisation of this principle (the waiving of state jurisdiction) has lateral implications” (Neave, 1998, p. 236). One of them is the financial burden which is incurred by teachers for their participation in training activities either in the form of fees (20%) or in the form of related expenses, such as transport, accommodation etc (38%). This, together with the absence of recognition of many training activities, as the proportion of non formal activities which are recognised range from 49% (October) to 65% (December), is likely to act as a disincentive to teachers regarding professional development and participation in life-long learning. An extremely low proportion of activities offers recognised qualifications, for example, undergraduate or postgraduate degrees or doctorates as certification. This type of further training is long-term, expensive, laborious and usually presupposes the intervention of an Institute of Higher Education. The high proportion of unaccredited training activities together with the awarding of certificates without some kind of guarantee raises the issue of recognition of participation in such programmes. Finally, the awarding of certificates constitutes a new kind of recognition which has resulted from the short-term aims of the EU for the period 2011-2014 for the promotion of excellence and innovation.

#### **4. Discussion and suggestions for research**

Today teachers' further training is integrated into the wider framework of the “Totally Pedagogised Society”, as defined by Bernstein, of postmodern societies, in which everybody is continually being educated (life-long) (Bonal & Rambla, 2003, p. 174) and “the necessity to regard learning as a personal choice and need is promoted...

responsible “individualism”, where statistics impose classifications through which people think about themselves and the options they have at their disposal (Lawn & Grek, 2012, p. 84/98). Therefore, even though the teaching profession has always been one of life-long learning (formal and informal), today it is coming under intense pressure, which then influences, however, its identity, the quality of training and generally the development of conventional education (Day, 2003, p. 22).

Thus, in the society of knowledge, a new form of teacher professionalism is taking shape, which also influences their in-service training. Knowledge of a particular subject is of little concern; however, teachers are expected to continually respond to new learning environments, resulting in a minimalising of scientific expertise, enhancing it through general interest subjects. Consequently, there is less and less demand for “singulars” (specialised knowledge) while “genericism” (general knowledge) is continually gaining ground, which is apparent in many learning programmes, for example, basic skills, problem-solving skills etc applying to all subjects and fields (Beck & Young, 2005). Regarding teacher's autonomy and a greater accountability towards the school results and his own personal development, he is subjected to a regime of constant checks, which leads him to frequently seek out training programmes so that he can create and enhance his portfolio. The effect of the above on the quality of training programmes is immediate. Teachers are not regarded as professionals with knowledge and experience, while learning is not seen as a continuation, but instead they are offered a wealth of activities which have no connection with each other and no continuity, “without coordination...Scattered and unaccredited forms of training” (Bagakis, 2011, p. 4). In addition, as regards the rapid changes and unpredictable future, education is responding with general modes of instruction and short-term solutions, programmes of short duration which can easily be organised, developed, established and achieve the necessary trainability in order to address the continually new demands of the market (Beck, 2002).

Furthermore, the administrative autonomy of schools, on the one hand, will provide individualised solutions for training and will probably enhance the competitive practice of both schools and students going at different speeds and obeying the laws and demands of the market to a greater extent. Simultaneously, as with the adults' education and training during the period 1989-1999 when the policy of the European Social Fund was implemented, it is likely that teacher training will “turn to private sector training providers, shrinking participation in the public sector, making the system function on a competitive basis” (Karalis & Vergidis, 2003, p. 408). On the other hand, the choice not only of the training provider but also of the programme raises issues about the quality and credibility which teachers and schools will be required to resolve without necessarily having the qualifications for it. Moreover, the demand for open and autonomous learning environments removes the limits and dividing lines between the world of school and the rest of society, which leads to restructuring not only of the conventional education system but also of the teachers' training as non formal and informal forms of learning are increasingly encroaching and putting pressure on conventional education.

The kind of training which is being promoted is also directly linked to the dynamic presence or the weakening of the education sector in the wider political arena. Training which is centrally organised by the state is usually of medium to long duration, is on a large scale, combines theoretical training with practical experience, responds to the needs of each field individually, strengthens the political power of the education sector. As mentioned by Charlamis and Kotsifakis (2005), “A cohesive training programme of long duration, as demanded by the teaching unions, provides strong arguments for

claims for better working conditions" (p. 367). In contrast, the individualised approach to training, the programmes of short duration, the autonomy and decentralisation of the choice of provider and programmes, the decrease in the number of public sector providers in the field of further training, the dominance of programmes with general subjects and skills diminishing scientific knowledge constitute ways in which teachers' professional identity is eroded. In this way, however, the state is relieved of its responsibility for the teachers' professional development and the teachers' rights to claim not only improvement in working conditions but also in their in-service training (sabbaticals, reimbursement of expenses, cohesive programmes of long duration etc are being seriously undermined).

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## **10.8. Teachers' professional development contributing to a qualitative education**

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### **Abstract**

*This paper highlights the need for teachers' professional development and the advantages of teachers' training. Moreover, the present article presents the ways of teachers' integration in the school unit and their in-school training. Both are quite necessary for the quality of education.*

**Key-words:** teachers' professional development, training, educational policy

### **1. Introduction**

Nowadays, due to the speedy scientific progress, teachers' professional training is utterly mandatory. Both the new technologies introduced in the education field and the new perceptions formed make teachers' professional development imperative for a quality education. The old model of the 'wise' teacher with the innate pedagogical talent is considered to be an obsolete perception in the field of education, since the modern scientific concern requires a new role on the part of the teacher. Thus, nowadays, the teacher is considered to be a professional who should have special scientific knowledge and well psycho-pedagogical training.

Teachers' professional development begins at the first years of their studies and continues during their whole life. Teachers' educational policy contributes to the teacher's development, since it defines the situation in which the teachers work.

Teachers' training is considered particularly important, since it enhances teacher's existing academic and professional knowledge and suggests better ways to work and deal with problems. Training is a challenge procedure that aids, supports and offers opportunities to the teachers' professional development and the quality of the educational system. It is mainly a function of the teachers' needs, identified by the previous basic education, their work and the educational system.

Therefore, teachers' training involves multiple training activities in order to cover the educational needs, which relate both to teachers' personal and professional development and the quality of educational system. This means that it is necessary to implement specific education policies which, in the context of wider educational policy, promote teachers' academic, professional and personal development.

The current paper will stress the need for the teacher's professional development and its contribution to a qualitative education.

### **2. Teachers' professional development**

The term 'professional development' refers to the acquisition or the development of the knowledge concerning teaching skills. However, teachers' professional development is a highly complicated process. It is the process by which teachers acquire and develop their knowledge, skills and emotional intelligence that are necessary for a responsible professional thinking, the planning of the lesson and the teaching practice

with children and colleagues at every stage of their career (Dimitropoulos, 2002). Fullan and Hargreaves (1995) argue that the professional development includes the acquisition of knowledge and skills in new topics, the promotion of teaching capacity, the development of the cooperation and the deeper awareness of the teaching profession. Indeed, according to Mavrogiorgos (1999), teachers' professional development is identified with the teachers' improvement in their teaching role and their desire to do their job better and more efficiently.

A complete program for teachers' professional development requires facilities and mechanisms, such as the following:

- Mechanisms about knowledge acquisition concerning the teachers' training needs and needs of the educational system.
- Making decisions mechanisms about directions, thematic programs, annual planning, prioritizing, certification procedures, educational programs, etc.
- Agencies and institutions for the implementation of these programs (Mavrogiorgos, 1999).

An incentive for teachers' professional development is the need for self-realization, which is the top of the hierarchy of needs, according to Maslow. This need relates to the activation of human skills and capabilities (Koutouzis, 1999). The achievement of the goals that the teacher sets gives him/her satisfaction, happiness, high self-esteem and desire for work.

In addition, teachers' professional development is influenced by the educational dimension of the school and the way that the sectors of the school are institutionalized. Therefore, the following mechanisms that determine the educational policy of a school unit, contribute to the teachers' professional development:

- Teachers reception, initial support and integration: The reception of a new teacher in a school organisation includes mainly the information and the orientation process, which aims at: a) providing the necessary information to the new teacher, b) bringing him/her into contact with the other teaching staff, c) giving him/her adequate support and assistance, d) fostering the feeling of belonging to a wider group, e) confirming that his/her presence is evaluated, f) strengthening and confirming the requirements of the school, g) answering to all the questions. At this phase the manager of the school plays an important role, since he/she is required to work with the teacher very closely (Anthopoulou, 1999).

- Teachers' advisory support and motivation: the aim of the advisory support is to help the teachers a) to know and accept themselves, identify and understand their personal characteristics, b) to exploit their potential in the best possible way c) to be adapted well in the social and professional environment, d) to be developed personally, socially and professionally, e) to make prudent educational choices in a professional way, f) to face any obstacles on their professional way with success (Dimitropoulos, 1999). At the phase of the support and motivation the colleagues and the manager of the school play an important role, who help the new teacher to be adjusted to the school environment by: a) informing him/her of the school basic objectives and rules, b) informing him/her about the students and the teaching staff, c) understanding the abilities and the key elements of the new teacher's personality, listening to their problems and concerns and boosting their morale, d) forming a positive climate, taking responsibility for the quality of the results and consistency of relationships within the educational unit (Katsoulakis, 1999).

- Teachers' assessment: Teachers' assessment gives the teacher and school manager the opportunity to meet and assess the school performance. The main purpose of these meetings is to improve the performance of the education, improve the working relations and promote the teachers' career (Everard & Morris, 1999).

### **3. Training**

Training also plays an important role in teachers' professional development. Training is defined as "the set of measures and activities adopted and implemented in order to improve and develop academic, practical and personal or professional knowledge, skills, abilities and interests of teachers during their career" (Mavrogiorgos, 1996, p. 86). It is a challenge procedure that aids, supports and offers opportunities to teachers in order to be developed (Mavrogiorgos, 1999).

Teacher training can take part in the school environment or out of the school. The in-school form of training is more efficient and reliable than the out-of-school training, because it meets teachers' specific needs and the needs of the school program, links the theory with the practice, creates the school culture and contributes to the school cooperation with the other schools and research action. Moreover, the in-service training is particularly suitable for the teachers' promotion, the facing of the specific pedagogical and didactic obstacles and the critical reception and integration of educational measures being established (Mavrogiorgos, 1999).

The in-service training could be organized (Mavrogiorgos, 1999):

- at the beginning of the school year
- during the school year
- at the end of the school year.

Whenever it happens and whichever form the in-service training has, it always aims at the school unit development and its autonomy.

With the in-service training of the staff the school unit can form "internal politics" (Mavrogiorgos, 1999) and, therefore, can provide quality education. Each school can analyze its training needs and interests through a process of self-definition and self-regulation in combination with its objectives and priorities. In this way, the school unit strengthens its autonomy and provides quality education services.

### **4. Conclusion**

Teachers' professional development is a complicated process. It starts from the first years of the studies and continues throughout all the years of teachers' professional career. School policy plays an important role in teachers' professional development, since it forms the environment in which the teacher acts and performs.

The educational policy within the school unit that enhances the teachers' existing academic and professional knowledge is particularly important. The ability of the school unit to organize in-service training leads to its self-direction and self-regulation. School unit is getting improved and developed continually if training, counselling and staff motivation are essential and permanent functions (Mavrogiorgos, 1999).

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## **10.9. Teacher training and the case of International Baccalaureate Organisation: The emergence of a new teachers' professional identity in light of new modes of global governance in education**

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### **Abstract**

*With globalisation and the emergence of various international actors in the field of education, national matters have become exposed to global forces. This article focuses on International Baccalaureate (IB), a dominant actor in the field of international education. It draws on data gathered from archive material covering the period 2007-2013. Evidence suggests that IB places much emphasis on teachers' professional development which is pursued via many systematic ways (e.g., sponsorships, partnerships). The article discusses the new dynamics that seem to influence and penetrate teachers' professional identity.*

**Key-words:** Professional development, IB, professional identity, governance

### **1. Introduction**

Developments in the fields of culture, politics and economics have led to the emergence of globalisation, conceived of as a set of practices and a set of discourses, which have penetrated every aspect of hitherto nationally-led activity, bringing an overhaul to the relations between the national and the global field. As Brown and Lauder (1996) suggest “The significance of globalization to questions of national educational and economic development can be summarized in terms of a change in the rules of eligibility, engagement and wealth creation.” (p.2). Essentially, this translates to greater exposure of the national matters to global multi-national corporations (MNCs). It also links with the increasingly pervasive role of international organisations (IOs) in national systems. As far as education is concerned, scholars have discussed the emergence of a global education policy field (Jakobi, 2009), the role of IOs in producing education policies aligned with the “principles of relentless economic competition” (Moutsios, 2009, p.469) as well as their role in problematising ‘skills’ and ‘competencies’ (Grek, 2010). A new order of global governance seems to become established, engaging state and non-state actors in various ways and situations, where the “extent and nature of the interconnections have changed, affecting the sovereignty of nation-states and undermining their autonomy” (Olssen, Codd and O’Neill, 2004, p. 10).

Alongside their influence at the level of educational practices with several programmes and guidances, IOs promote specific ideas and principles with regard to

the modern individuals. For example, OECD (2005) points out the necessity for the person to possess a multitude of skills and competencies in order to perform in the modern world and balance “economic growth with environmental sustainability, and prosperity with social equity” (p. 4). These competences also resonate with the neoliberal discourse of ‘agile’ individuals (see Gillies, 2011), a reflection of the ‘entrepreneurial self’. According to Peters (2001),

A genealogy of the entrepreneurial self reveals that it is the relationship, promoted by neo-liberalism, that one establishes to oneself through forms of personal investment (for example, user charges, student loans) and insurance that becomes the central ethical component of a new individualised and privatised consumer welfare economy. In this novel form of governance, responsibilised individuals are called upon to apply certain management, economic, and actuarial techniques to themselves as subjects of a newly privatised welfare regime. (p. 60).

Nevertheless, the instrumentalistic approach of global education field does not evade the moral rhetoric of the “global citizen” who aspires to an independent world. Rather it wishes for the formulation of this type of citizen and the enhancement of “global citizenship” through education in order to prepare individuals for the challenges of this constantly changing independent world (see Tawil, 2013 for a discussion on education for global citizenship). Global citizenship may help individuals associate with the global community “through identification with the humanistic values that inspire such principles as equality of rights, respect for human dignity, social justice, and international solidarity, upon which the ethos of international normative frameworks are based.” (Tawil, 2013, p. 2).

It is within this global education field, that nation-states endeavour to follow the international trends, be flexible and line up their national systems with the promulgation of the various international players (IOs, MNCs, and others). Amongst them, our interest turns to International Baccalaureate Organisation (IBO), a prevalent player in the field of global, and most importantly, what has come to be known in the literature as, ‘international education’. With regard to international education UNESCO (1974) suggests:

Combining learning, training, information and action, international education should further the appropriate intellectual and emotional development of the individual. It should develop a sense of social responsibility and of solidarity with less privileged groups and should lead to observance of the principles of equality in everyday conduct. It should also help to develop qualities, aptitudes and abilities which enable the individual to acquire a critical understanding of problems at the national and the international level; to understand and explain facts, opinions and ideas; to work in a group; to accept and participate in free discussions; to observe the elementary rules of procedure applicable to any discussion; and to base value-judgements and decisions on a rational analysis of relevant facts and factors (p. 2).

Various scholars have attended to the specificities of international education, a term which enjoys various definitions (see Hayden and Wong, 1997). Lineham (2013) attempts to divide the various interpretations of the term in 3 areas. The first refers to the creation of an education system “designed to foster and develop international understanding and with this the promotion of peace and respect for different cultures”, the second refers to “The development in a host nation of an education system for expatriate children whose curriculum aims are the same as those of the home nation”, and the last one refers to “The introduction of international students into a nation’s

public school system” (p. 260). Although not new, international education has seen tremendous development over the last two decades, especially in the developing countries. This is due to the fact that “local parents” tend to see the local education system as outdated “or aimed towards the wrong educational goals”, therefore seeking for their children to gain access to international schools, where the curriculum is being mainly taught in English (Hallinger, Lee, & Walker, 2011, p. 125). Despite different views regarding its purposes, “people agree on the need to be prepared for an increasingly multicultural and globalized world” (Rasanen, 2007, p. 58). A dual interpretation can be ascribed in this statement in the sense that, on the one hand (“pragmatic function”), international education seeks to develop a set of skills and knowledges for the individual to be able to stand in the competitive environment of the global economy, whereas on the other hand (“ethical perspective”), it seeks to infuse the individual with a set of moral values to pave the way for “world peace and greater intercultural understanding” (Wells, 2011, p.175). Therefore, international education becomes one of the drivers of the global education field, dominated by financial and social aspects as well as moral values.

## **2. Education in the aftermath of globalisation: The International Baccalaureate Programme**

Within this new status quo of global governance that seems to emerge, we focus on one particular aspect of international education, the IB Programme. Ball and Nikita (2014) stress out the mutation of education, as a result of globalisation and neoliberalism, into a market place that follows the rules of supply and demand: “On the supply side this means schools acting like businesses and being business-like. On the demand side it means parents and students acting as consumers optimizing their social and labour market opportunities” (pp. 82-83). Public education is flooded with the new market rules: competition, hegemonic individualism, assessment, quality assurance. International education seems to follow this trend, yet its ‘elite’ institutions still hold a particular enclosed position targeting specific parts of the population.

Commenting on elite education van Zanten (2010) points to the “common features of elite educational institutions that distinguish them from other institutions that look after young people from the same age cohorts” (p. 329). She suggests that a set of activities pursued by elite schools is “meant to develop a strong ‘bonding’ relationship among members and especially between ‘established’ students and new entrants, as well as between institutions and their alumni” (p. 330). In addition to this and alongside a specific academic curriculum, “academic distinctiveness has also been reinforced by the gender, educational and social profile of professors in these institutions” (p. 330) and teacher has been clearly indicated in this environment. As representatives of the international education, the majority of elite schools has incorporated the International Baccalaureate (IB) Programme in their corpus of studies. This seems to serve the needs of the new global elite, namely the “global middle class” (Ball & Nikita, 2014) or the “globally mobile parents” (Forsey, Breidenstein, Krüger, & Roch, 2015).

Cox (1985) traces the beginnings of the international schools and the IB Programme. As she reports, IB Programme arose as a result of long discussions with regard to the principles and the curriculum provided by the United National International Schools in New York, which was followed by a set of changes in the other organisations of international education, such as the establishment of the International Schools Examination Syndicate and the IB Office (IBO). In 1967, the Serves Conference established the specificities of the IB.

In 1968, the IB Diploma Programme (DP) was established to provide a challenging and comprehensive education that would enable students to understand and manage the complexities of our world and provide them with skills and attitudes for taking responsible action for the future. Such an education was rooted in the belief that people who are equipped to make a more just and peaceful world need an education that crosses disciplinary, cultural, national and geographical boundaries (IBO, 2013, p. 1).

IB is a non-profit educational foundation which offers 4 programmes covering the age range between 3-19 years old. Until the middle of June 2014, 147 countries across the world had 3804 accredited school providers, while in August 2015 the number of providers rose to 4267. As it will be further discussed, in this study we look at one particular aspect of the programme, the people who get it up and running, namely the teachers.

### **3. The study**

The paper discusses a case study based on archive material which was analysed qualitatively and quantitatively. The data collection included annual reviews retrieved from the IB Organisation (IBO) covering the period 2007-2013, as well as the strategic plan and the mission statement of 2010, which were put in the centre of a documentary analysis. Ultimately the aims were:

- a. To study the evolution of the IB
- b. To outline the profile of the teacher that runs the programme
- c. To investigate the role of IB in the current global educational field as a hegemonic player with emphasis on the educational profile as it seems to emerge from the data analysis.

In the next section we will present the results of the study, the discussion of which follows afterwards.

### **4. Results of the study**

According to the IBO (2013),

The IB's work is informed by research and by over 40 years of practical experience. [...] The dynamic legacy of the IB's founders continues to support a growing global network of schools dedicated to high-quality education, ongoing professional development and shared accountability (p. 1).

IBO seems to be interested in and create the conditions to play a dominant role in the international education and the global education field. The content analysis suggests that IBO is heavily invested in the continuous evolution of the organisation, its international scope, the professional development of the school staff, the target-setting and the acknowledgement of everyone's right to have access to education and, particularly, to IB education. For that reason, teacher training and continuous professional development appears as a theme in all the yearbooks. It is also considered to be a strategic priority of IB schools in the 2013 yearbook.

Partnerships with international agencies, governments, universities and other institutions are pursued in IBO's attempt to enrich the provided services. The aim is to widen access to IB schools by facilitating the development and commercialization of new high profile, innovative educational products and services. There is a continuous effort to provide the best programmes of international education and serve the different schools of the IBO worldwide in the best possible way. For its plans to come to fruition, IBO considers teachers to be a substantial factor.

The International Baccalaureate's professional development supports the ongoing commitment of our educators to be critical, reflective practitioners who value lifelong learning. IB professional development gives educators opportunities to develop a deeper understanding of what it means to be an excellent, internationally minded teacher. It goes beyond helping educators simply learn new skills by encouraging them to develop new insights into pedagogy and their own practices. (Description provided by IB Organisation in Bergeron & Dean, 2013, p.5)

The present study demonstrates the specific targets that the IB Organisation sets to create the desired type of teachers. Therefore, evidence suggests that the Organisation:

1. Argues for the need for professional development of staff, the potential to promote innovation and the development of high quality opportunities of staff development with an emphasis on quality assurance.
2. Seeks processes of professional development and for that purpose it leverages partnerships with highly qualified individuals.
3. Identifies teacher professional needs through research activities of the IBO and its schools.
4. Seeks to find sponsors and scholarship providers.
5. Cooperates with governments, international organizations, institutions of international scope.
6. Utilizes the tools of web 2.0, like the moodle platform where teachers work together.
7. Creates educational networks and establishes communities of support.
8. Favours on-line training as a means to extend training and reduce costs.
9. Plans three categories of workshops for professional development following not only the teacher needs but also the range of the possibility of payment of tuition fees.
10. Shifts responsibility for student learning at the level of the individual teacher.

In a nutshell, cooperation, participation, international spirit, pedagogical leadership are acknowledged by IBO as the values for the teachers.

## 5. Discussion

IB seems to place much emphasis on the role of IB teachers in paving the way for IB programmes to gain a leading or hegemonic role within the context of international education. Being one of the dominant and well-established actors of international education, IB Organization seeks for systematic and purposeful teacher training which facilitates the emergence of activities and initiatives that allow for communities and networks to be created and developed in light of new forms of governance. Deeds of that scope can be traced in the various sponsorships and cooperation links with government, international organisations and various institutions. As a consequence, although traditional forms of professional development, such as face-to-face and in-school training, still exist, they are also complemented with other forms, such as webinars and online workshops. As there is need for costs to drop, teachers are directed towards these online platforms, therefore becoming members of online virtual communities. Within this highly interconnected environment, which provides new opportunities to teachers, a new profile of the IB teacher seems to emerge (see also Bergeron & Dean, 2013). In the name of performativity (see Ball, 2003) neoliberal ideas of competitiveness flow and infiltrate IBO's pursuit of high quality professional development as well as teachers' professional identity; the need to perform better; to be up to date with developments in their field; to improve their practice and be more effective; all in all, to develop their entrepreneurial self.

At the same time, teachers are also responsible to infuse their students with the skills and competencies to become productive and entrepreneurial subjects themselves as well as with humanitarian principles that will enable them to become ‘global citizens’. They are part of a global workforce that is allocated with the task of educating today’s and tomorrow’s elite. They are conceived of and expected to act as the global neoliberal actors of elite international education. Considering the international scope of the organisation under the auspices of which they pursue their educational work, their professional identity is enriched with another element: IB teachers become patrons in the creation and maintenance of the international educational elite.

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## **10.10. Primary teachers' professional development in instructional design: blending formal and non-formal settings**

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### **Abstract**

*The present study derives from a larger professional development (PD) program regarding in-service science teachers' education (STED). In this particular paper, we focus on changes observed in primary school teachers, indicating the broadening of their views and practices concerning inquiry and science teaching by incorporating non formal settings. Results show that the instructional design of the research enabled teachers to become familiar with guided inquiry and produce their own Teaching Learning Sequence (TLS) at the last phase of the program. Other features concerning professional development, student's learning and the organization of focused site visits are also mentioned.*

**Key-words:** Professional development, science teacher education, instructional design, Teaching Learning Sequences (TLS), site visits.

### **1. Introduction**

Recent studies on science teaching describe science as a way of knowing about natural phenomena and science teaching as facilitation of student learning through inquiry (NRC, 2012). According to Schwarz (2009), teachers' professional development (PD) courses should focus on key aspects of reform-based science teaching like modelling-centred inquiry. At the same time, the informal aspect of education is highlighted, putting emphasis on out of school activities and addressing Science, Environment and Technology as a unified teaching content (Astor-Jack et al., 2007). Preparing teachers to teach science in an inquiry-based approach (Kang, 2008), and constituting them able to exploit the advantages offered in non-formal venues (Chin, 2004) are considered as basic issues in science education. Thus, the informal aspect of education should also be part of PD offering teachers resources and experiences that they can later adopt when teaching science (Neathery, 1998).

Concerning science teaching in Greece, considerable changes have been made during the last few years. Besides progress relating to curriculum reforms and ICT applications, current teaching and learning practices indicate a lack of adequate training in current trends of science-teaching, leading teachers to adopt rather traditional approaches. Additionally, content (e.g., extended curricula) and context reasons (e.g., number of students in class, lack of space/materials) seem to further discourage

educators and limit their repertoire. Based on the above, we tried to put forward an educational and research program in the attempt to train science teachers in instructional design according to the current trends of science education and the good practices of science teaching. At the same time, we studied the terms and conditions that would possibly facilitate the broadening of teachers' views and practices in science teaching.

## **2. The Science Teacher Education Project (STED)**

### ***2.1. Characteristics***

The STED project was a collaborative and participatory research and teaching program. Researchers and teachers interacted in small groups and were engaged on an equal basis to produce the teaching design. For the STED goals we utilized Teaching Learning Sequences (TLS) (Méheut & Psillos, 2004) as they are considered to be the most suitable teaching method for the available given time. The project included three strands, from preschool to secondary, covering the entire range of Greek compulsory education. All strands were guided by a common theoretical framework based on current trends in science education, but, at the same time, were focusing on different aspects of science teaching taking under consideration the particular characteristics of these educational levels. In the present study, we discuss the development of the third strand where a mixed approach was used incorporating both formal and non formal teaching settings.

### ***2.2. Project's phases***

The project took place in three phases, each one lasting about six months. During the first phase, teachers' initial profile regarding the design and implementation of science teaching and out-of-school activities was recorded. In the second phase, teachers were familiarized with TLS and their characteristics along with the various aspects and parameters they should take under consideration when they plan and conduct science lesson. A complete TLS developed to include a science and technology site visit was given to participants as an example of good practice (1<sup>st</sup> TLS). Teachers modified and adapted the given TLS in order to meet their students' needs, and then implemented it into their classes. In the third phase, the same procedure as in the 2<sup>nd</sup> phase was followed with teachers' developing and implementing their own TLS, while researchers were gradually reducing the provided support to them (2<sup>nd</sup> TLS).

## **3. Research methodology**

### ***3.1. Research tools***

Multiple research tools were used to gather data in each phase aiming to capture changes in teachers' profile. Initial teachers' profile was outlined using data from extended interviews with teachers, a questionnaire exploring their expressed practices in terms of site visits, and classroom observation using a specially developed protocol. Throughout the project, researchers and teachers were keeping notes in semi-structured diaries, while at the end of each phase, a reflective discussion among teachers and researchers was taking place. Each teaching was observed by two researchers, who were taking notes and independently completed an observation protocol focusing on the following nine basic research domains that emerged from the international literature:

- a) Teaching approaches and models
- b) Students' alternative ideas
- c) Content transformation

- d) Classroom verbal interaction
- e) Inquiry
- f) Use of ICT, models and experimenting
- g) Procedural knowledge
- h) Epistemological knowledge
- i) Incorporation of non-formal settings into science teaching.

### **3.2. Data analysis**

The analysis of data was mainly qualitative, while mixed methods were used combining a top-down and bottom-up approach. For each domain, data from all sources (e.g., observation protocols, diaries, reflective discussions) were grouped together in excel spreadsheets, following a top-down approach. Within each of these domains, categories were developed (bottom-up approach), putting emphasis on possible qualitative and quantitative changes in teachers' views and practices over time.

Data from teaching observation protocols, which were the main source of quantitative and qualitative data, were triangulated with researchers' and teachers' diaries in conjunction with the reflective discussions. In this study, findings regarding teachers' profile are presented only if these have been crosschecked by at least two different sources of data (e.g., observation protocols, diaries, reflective discussions). Furthermore, in order to regard these findings as a stable characteristic of the teachers' profile, they had to be identified at least three times in each phase. In all cases, data were gathered and independently analysed by two researchers. In the case of contradictions, discussion among researchers was taking place until they reached a common agreement.

## **4. Findings and discussion**

In this paper, we discuss recorded changes related to the two primary teachers' profile (views and practices) participating in the third strand of the program as mentioned above. Primary teachers had both more than 7 years of teaching experience; during the research they were teaching science at the 5<sup>th</sup> and 6<sup>th</sup> grade (students age between 11 and 12 years). Differentiations mentioned concern the project's third phase (last phase). At that point, teachers developed their own TLS within the topic of renewable and non-renewable energy sources and electromagnetism applications to energy generation. The TLS also included an organised site visit to a local power station plant.

Results indicate progressive broadening in teachers' views and practices during the project's phases in three basic domains:

- 3.1. The teaching approach in relation to inquiry
- 3.2. Verbal interaction
- 3.3. Organizing site visits.

### **4.1. Teaching approach**

Primary teachers' initial teaching profile, as it was recorded at the first phase of the program, was mostly traditionally oriented with slight differences between them. Teaching was mainly based on lecturing. In the case of teacher A, the use of ICTs was occasional, while he was integrating them into teaching through traditional approaches (e.g., using the interactive board to project the content of the school textbook, highlight and summarize the main points at the end of the lesson). Teacher B was conducting a discovery demonstration in order to make the concept under study more comprehensible for students. During initial teaching, teacher B was handling all the

materials of the experiments and in some cases was giving the correct answers to students.

Both teachers started from about the same point (that of a teacher-centred teaching approach) and during the second phase they gradually progressed towards a type of guided discovery (given TLS as a good practice in second phase), while at the third phase, they managed to implement a guided inquiry of teaching. In particular, primary teachers at the third phase of the program jointly organized a TLS for renewable and non renewable energy sources with gradually reduced guidance from the researchers. In the TLS, teachers incorporated their own short PowerPoint introductory slides and developed students' worksheets in a way that inquiry teaching was combined with jigsaw group work. The strong lecturing that was the dominant role of teachers before they join the PD project was gradually replaced by increased students' involvement. This was obvious as teachers encouraged students through worksheets to conduct inquiry research in order to reach their own conclusions. More emphasis was also put by teachers to improve students' experimenting skills. Students handled all the materials for experimentation, conducted all the hypothesis testing, and made the summary at the end of the lessons. ICT use this time was carefully planned and suitably integrated into inquiry teaching by specially selected videos and simulations. In case of teacher A, the large number of students in class and time pressure, made group coordination and support difficult, causing teacher A to occasionally implement discovery demonstration. For instance, at a particular point of the teaching he had to explain in one group of students how an experiment should be conducted. Progression was evident for both primary teachers in relation to their teaching, as more open inquiry methods were implemented by them.

#### **4.2. Verbal interaction**

Concerning verbal interaction, the initial traditional model of teaching (e.g., lecturing and presentation of the new knowledge) limited students' role to simply answering specific teachers' questions, reducing in that way classroom verbal interaction. The results from the 1<sup>st</sup> TLS implementation showed that the teachers' role was less dominant in verbal communication, moving gradually to the adaption of more innovative teaching approaches. During phase three (2<sup>nd</sup> TLS), teachers achieved substantial students' engagement in the learning process, giving space to students to make the synopsis and the control of the initial hypothesis, and facilitating them during inquiry. The decisive factor for this gradual change seems to be the learning pathway that teachers planned for their students through the questions they posed in worksheets, enabling them to collect and process data. Teachers encouraged students to experiment and find their own answers, enhancing their reasoning and giving focused feedback to their questions. At the same time, students felt more confident to express questions or seek support from their teachers, while teachers made considerable effort to facilitate students' inquiry. Although teachers tried to promote inquiry dialogue between students, verbal interaction within students' groups remained substantially limited throughout the project.

#### **4.3. Organizing site visits**

Interviews and questionnaires revealed that, although primary teachers were at the beginning of the project quite familiar with the inclusion of site visits into their teaching practices, they did not fully benefit from these experiences in a systematic way. Site visits were recorded as simple trips with often vague learning objectives. Students and teachers usually followed a guided tour or simply observed the area or the exhibits. As

a result, there was little teacher and student preparation before the visit, while after implementation an oral conversation about students' impressions was considered as the main follow-up activity. Some practical obstacles were also recorded concerning out of school activities, with teachers referring to structural (e.g., children's' safety, transportation to the field) and economic (e.g., cost for children) difficulties.

After joining the PD project, all teachers in the reflective discussions stated that they broadened their views and practices concerning the planning and implementation of site visits. Primary teachers were more willing than before joining the PD project to incorporate out of school activities into their science teaching and stressed the learning effects and quality of produced learning for children instead of mentioning practical difficulties. They also realized the importance and the efforts required for organizing site visits with focused pre, during and post visit activities for students.

The practices during the organization and implementation of the site visit that they included in their own TLS were fairly modified compared to the one included in the 1<sup>st</sup> TLS. More specifically, teachers attempted this time to prepare their students for activities during the visit. They assigned specific student work to be done in groups, as, for example, posing questions to the guides, recording or taking photos. In one case, the teacher tried to further extend his support to students, by transforming the content of guided tour and connecting it with prior students' inquiry findings in class.

After the visit, both teachers had planned a teaching session for follow up activities with summative and metacognitive purposes. They either used a digital presentation to summarize key elements of the teaching sessions (teacher A) or elaborated on students' reports (teacher B) in order to infuse their work and experiences during the visit and TLS implementation. These reports were posted to the school site in order to further disseminate project's results to the community.

## 5. Conclusion

Recorded changes for both primary teachers present many similarities, while differences between teachers' practices were also identified. Practices concerning inquiry were shifted towards a less teacher-centred and more student engaging approach. Integration of ICTs into teaching was more focused to facilitate students' understanding of concepts and mechanisms than using them for attracting students' attention, a practice common at the beginning of the program. Teachers noted that the scaffolding design of the participatory research enabled them to be familiar with inquiry-based instructional design and felt more confident and motivated to adopt similar approaches in the future. An important factor for the implementation of innovative practices to teaching proved to be the prospect of better student learning outcomes through inquiry-based teaching design (Janssen, Westbroek, & van Driel, 2014). Students' progress was reported as an encouraging factor, as teachers' expressed their satisfaction realizing that their students became gradually more creative through inquiry, improving their searching and metacognitive skills. Teacher's reflection also highlighted the handling of students' group-work and the organization of site visits with focused pre, during and post visit activities as the most challenging parts of the project.

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## **10.11. Spreading the virus of active learning: Widespread exploitation of the experience of learning mobility of teachers participating in the Erasmus + KA1 program**

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### **Abstract**

*For the exploitation of the Erasmus+KA1 teachers' mobility project results, we carried out an in-service training: We shared the learning experience of our mobility training with all the teaching staff, with the view to improving our performance and effectiveness in our institution. During the next phase, we implemented the acquired knowledge in our classrooms in various subjects. We diagnosed a positive change in the learners' attitude concerning their participation in the learning process: the number of active learners increased, intrapersonal relations improved, pupils were more energetic and enthusiastic to repeat activities, which verifies Dewey's assumption that "one cannot learn without motivation".*

**Key-words:** Erasmus+ mobility, teacher professional development, peer learning, enhance motivation

### **1. Introduction**

Educators assume the responsibility to connect the rapidly changing and evolving world with its future citizens. The teaching profession is becoming increasingly complex and demanding around the world and teachers' working environment is remodeled and challenging (European Commission, 2014). The quality of teaching is a crucial index of the capability of the European Union to increase its global competitiveness.

Several research findings take into account that more recently developed teaching approaches require more professional development. Teacher efficacy is strongly connected to teacher professional learning opportunities that can provide mastery and vicarious experiences, raising teachers' personal competence levels. School embedded professional learning opportunities can, thus, answer to self-directed desires for instructional change, which can then provide the motivation to sustain efforts and overcome obstacles. There seems to be a powerful relationship between increasing teacher efficacy and increased student achievement (European Commission, 2011). They unquestionably go hand-in-hand.

The EU points out that training programs for teachers should enhance teachers' experience, promoting collaborative interdisciplinary approaches with the intention to be assumed by the educational institutions and the educators as a part of their commitment to join forces with relevant bodies and institutions, such as colleagues, parents and employers (European Commission, 2005). The European Union promotes significant financial opportunities offered by the Erasmus+ Program to its Member

States in order to enhance the quality of teachers' continuous professional development (European Commission, 2005).

The Erasmus+ Program Key Action 1 (School education staff mobility) provides support for projects that promote the development of teachers' competences. The eligibility criteria for approval of the submitted projects stipulate and assess that the learning mobility:

1. is integrated in the forward plan of reinforcing the international scope of the sending institution (which may provide general, vocational, or technical education on any level)
2. corresponds to evidently defined needs of the teaching personnel
3. is accompanied by suitable measures of selection, preparation and attendance
4. cares for the dissemination of the project and undertakes the wide use of the learning outcomes within the institution (IKY, 2014).

This presentation aims to demonstrate the ways of disseminating the implementation of our school's Erasmus+ project, as well as to reflect its impact on the wider educational community and to provide useful insights into teachers' professional development.

During the school year 2014-15, the 2<sup>nd</sup> High School of Xylokastro undertook the Erasmus+ Key Action 1 project "*Spreading the virus of active learning*". Seven teachers took part in two training workshops delivered by the *European Bridges Consulting*: The first one, called "Group Dynamics & Social Skills in the Classroom" took place in Italy and offered an insight into group dynamics and social skills, tools to observe group process, ways to improve classroom climate and the general school wellbeing, as well as to discuss how to implement this knowledge in the classroom. The second workshop, called "Action Methods Increasing Motivation and Quality in Learning Situations" took place in Portugal where teachers learnt ways to improve learners' motivation, create group cohesion and a positive classroom climate.

For the dissemination of the project results, we proceeded on two main axes: we first carried out an "in-service collaborative training", that is we shared the learning experience of our mobility with all the teaching staff in our school with the view to improve our performance and effectiveness in our institution (Papanaoum, 2005, p. 89). The training was based on exchanging experience among peers, that is the teachers that participated in the learning mobility and the rest of the teaching staff (European Commission, 2005).

During the next phase, we implemented the acquired knowledge in our classrooms holistically in various subjects: English, Home Economics, Biology, Modern Greek, Professional Orientation, Interdisciplinary Projects. In due course, we diagnosed that a positive change has been demonstrated in the learners' attitude concerning their participation in the learning process: the number of active learners increased, intrapersonal relations improved, pupils were more energized and enthusiastic to repeat activities, which verifies Dewey's assumption "one cannot learn without motivation".

Overall the difficulties that we faced were the different teaching styles each one of us adopts, the different codes of conduct and communication, the diverse professional experiences of teachers (Danti, 2005) and, occasionally, the lack of time.

The second axe of the dissemination has been addressed to all educators of the Xylokastro-Evrostini municipality with the view to creating a teacher network, promoting the development of a common understanding of instructional goals, methods, problems and solutions. For this reason, the teachers collaborated with our Pedagogical Counselor, who supports the implementation of educational innovations

and encouraged us providing guidance and co-ordination to carry out an interschool training workshop for teachers of our area, which took place on May 6<sup>th</sup> 2015, so as to promote the effective teaching methods that we had recently practiced. We had aspired to trigger a positive impact on the quality of the participants' teaching approaches, which has been verified by the way that our colleagues responded to the evaluation questionnaires. As professor MacBeath states (2005), "few charismatic teachers who act differently may start to incubate an epidemic; they may be two or three teachers or the head teacher or a leading team" (p. 40). Our initiative anticipates the growth of a central core of teachers in each school of our area who will advance further research in the context of teachers' professional development.

## **2. The Erasmus+ Program**

The European program Erasmus+, which concerns the crucial sectors of education, training, youth and sports, responds to the "Europe 2020" priorities strategy for tackling the socio-political crisis, boosting training, employability, social equality and inclusion (IKY, 2013). The program aspires to:

- tackle unemployment, particularly, among youth, by reducing the rhythm of early school leaving and diminishing the number of workers with poor specialization
- encourage the development of social funds among young people and the acquisition of participation skills in public affairs
- provide training and partnership opportunities to organizations and personnel of the youth sector, in order to expand their professionalism and perception of the European dimension

The Key action 1 (School education staff mobility) offers the opportunity to the staff of public and private schools to benefit from a learning experience abroad. Thanks to the activities of the learning mobility projects, the participants can advance their knowledge, competences and skills, improve their communication fluency in a foreign language, get in contact with other cultures and develop their European identity. Through the mobility projects, school educators are motivated to acquire new skills related to their school's needs. Subsequently, they will have to maximize the impact of the activities for the advantage of the professional development of all the members of the teaching staff and integrate the new competences and attitudes into their teaching practice.

## **3. The theoretical framework of Key Action 1**

Policy discourse in Europe emphasizes the crucial role played by the teaching profession in helping young people acquire the competences they need to develop their full potential and be active members of society and the workforce (European Commission, 2007). The European Commission points out that the teaching profession falls within the scope of the Lifelong learning profession, on the grounds that the initial training cannot provide the teachers with the knowledge and competences required for practicing their vocation throughout their lives.

Educators teach young people to plan the learning "map" of their life responsibly; however, this presumes that they are able to create their own learning "map". For this reason, the Commission supports the development of initiatives which will strengthen the European dimension of education and enhance teachers' mobility.

The European Commission recognizes that the provision of high quality initial teacher education, early career support ('induction') and continuous professional development constitute a significant factor in ensuring that suitable candidates are

attracted into the teaching profession and that teachers possess and maintain the relevant competences they require to be effective in today's classrooms. Initial teacher education should provide prospective teachers with the core competences required to deliver high quality teaching, as well as stimulate the motivation to acquire and update competences throughout their careers (European Commission, 2014).

Both initial teacher education and the continuous professional development of teachers should be founded on sound pedagogical research and apply adult learning methods based on communities of practice, online learning and peer learning (Mavrogiorgos, 2005). They should ensure that teachers have regular opportunities to update their subject knowledge and to receive support and training in effective and innovative modes of teaching.

#### **4. Teachers' professional development**

Nowadays, a teacher is considered to be a professional on the grounds that:

- i. (s)he holds responsibility for her/his school attainments on personal and socioeconomic levels
- ii. (s)he contributes to each child's education
- iii. (s)he is a member of a professional domain and is subject to an administrative system that controls her/him rather than support her/him

However, teachers cannot perform detached from their personal beliefs in their role, emotionally disconnected, outside the sociopolitical context of education (Papanaoum, 2005). In order to perform her/his work successfully, a teacher has to mobilise all of her/his powers (mental, as well as the emotional part of her/his personality). This means that in the educators' case, particularly, personal development is equal to professional growth. As Dimitropoulos (1998) affirms, although most definitions of teachers' professional development focus on acquiring and expanding knowledge of learning modules and teaching competences, in reality it is an extremely complex process.

Through this course of action, educators critically develop their knowledge, competences and emotional intelligence, which constitute valuable resources for thinking professionally correctly, planning and working with children and colleagues throughout each phase of their professional life. (Mavrogiorgos, 2005) adds that teachers' professional development develops, since the first pupils' initiation/contact with schooling, that is since the age of five, and undergoes an informal twelve-year apprenticeship that exposes future teachers to the prevailing paradigm of what it means to be an educator, giving rise to their future professional development.

#### **5. How in-service training contributes to teachers' professional development?**

By the term *in-service training*, we mean a form of in-service collaborative training that concerns the teaching staff of a school, during which all teachers participate and seek to improve their work in the specific school (Papanaoum, 2005).

Research on international level has shown that, in order to be effective, teachers' professional development has to follow basic principles and methodology of adult education, such as teachers' participation in each step of the planning of a training program, as well as combining theory and practice. What is more, emphasis should be put on teachers' needs and their connection with pupils' needs, on teachers' expectations and their impact on teachers' personal and professional lives, on educational mentalities and codes of conduct. By triggering the process of introspection in order to write down and analyze her/his personal needs, (s)he has already launched the process of self-awareness, emancipation and openness/inclusiveness, which constitute the rudiments of personal growth (Danti, 2005).

The in-service trainings can attenuate lots of problems, as long as they take place in the school premises and the teachers have the opportunity to participate in the planning, combine learning with their personal choices, clarify any uncertainties and, in some cases, proceed with changes in everyday practices (Harland & Kinder, 1997 as cited in Papaprokopiou, 2005).

## **6. Teachers' professional development through the Erasmus plus Program, Key Action 1 for school education**

The structure of the European program Erasmus+, the key action 1 for School education, particularly, supports teachers' professional development through their in-service training abroad. The implementation of the learning mobility plan requires the elaboration of a European development plan of the school unit. In order to edit such a plan, it is necessary to discuss and evaluate the overall effectiveness of the school and record its needs together with the School Adviser. Our teachers' board pointed out our need to meet and associate with colleagues from other countries, get to know their ideas and way of life. We also noticed our need to develop self-awareness and acceptance of the otherness, build up the sense of belonging to a wider European community. What is more, we highlighted our need to acquire new competences to implement new teaching methods, create a more positive climate in our classrooms, manage communication issues and improve human relations.

According to the approved project, three teachers attended the workshop in Italy and four teachers the workshop in Portugal. After their training, the seven teachers shared their experience with all the other teachers of the school, so as to implement the new approach holistically.

The next step was to conduct two surveys among teachers and pupils in order to find out how effective the implementation of the new methods has been and reflect on the need to plan a new intervention.

During the third semester we collaborated with our School Advisor and organized a seminar for all the primary and secondary teachers of our area, during which we had the opportunity to share the acquired knowledge and competences from the European workshops. We finally got inspired by the positive outcomes of our project and launched a collaborative network of teachers who wish to implement active learning methods in their classrooms.

## **7. The outcomes of the program**

I. As far as the educational intervention is concerned, which focused on disseminating the outcomes of our training to our colleagues and applying the new knowledge and competences in teaching to our pupils, we have become aware of the following:

1. The teachers who participated in the mobility seminars estimate that they benefited a lot. They conveyed their enthusiasm to their colleagues and inspired them to implement the activities of the trainings (on Active learning in Italy and Portugal) in their classrooms
2. The majority of the teachers showed to be willing to attenuate their introversion and open themselves to exchange ideas
3. The pupils expressed they were really fond of the activities and wanted to repeat them
4. The class where pupils had been facing communication difficulties eventually improved their relations

5. Phenomena of attention deficit disorders have been moderated
- II. In order to disseminate the outcomes of our training to our colleagues of the wider area:
1. 75% of the participants were female and 90% secondary teachers
  2. We received comments from the follow-up questionnaires, regarding their expectations and evaluation for the seminar we delivered:
- a) Teachers' expectations (in the order of the choices of the majority)
- i) To learn more about the Erasmus+ program
  - ii) To motivate my pupils
  - iii) To learn alternative techniques fostering enjoyment during my lessons
  - iv) To learn how to intervene in order to create a more positive climate in my classroom
  - v) To interact, exchange ideas and good practices with my colleagues
- b) Evaluation of the training: The majority of the participants stated that the seminar met their expectations and it was not at all tiring; in addition, they stated that they were not familiar with these teaching method and that they wish to attend a second session. They all affirmed that they will try to implement what they learnt in their classrooms.

## 8. Conclusions

Our positive experience of the European program Erasmus + KA1 has been that it

- encourages a needs analysis of the teachers' body so as to be adequately prepared and improve the quality standards of their educational institution affecting the school system as a whole
- offers the possibility to teachers to decide on which professional development seminar(s) to attend abroad and choose the one(s) that fits (fit) to their needs
- covers the expenses of the teachers' mobility (-ies) and training(s)
- urges the teachers to organize an in-service training by means of peer learning, so as to share and apply the knowledge and skills acquired
- suggests conducting research on the effectiveness of the educational intervention
- recommends to critically reflect on the learning experience and its impact on the school community
- encompasses a regional perspective by involving as many teachers as possible in using active learning methods in their teaching

Finally, we took the initiative to create an educational network, so as to serve our colleagues' pertinent needs and exchange our experience of good practices.

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