

“Avanguardie Educative”: paths of innovation for schools

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Abstract

This article presents “Avanguardie Educative” (<http://avanguardieeducative.indire.it/>), a cultural movement founded to gather the most significant experiences of organizational and educational innovation in Italian schools and encourage transformation of the traditional lecture-based school model. With the aim of supporting an innovation process that has emerged from bottom –up reasoning, INDIRE (National Institute for Documentation, Innovation and Educational Research) and 22 founder member schools (advanced schools) have produced a manifesto based on seven pillars that inspired the “Gallery of 12 Ideas” –experiences of innovation re-elaborated by researchers based on experience gained in certain Italian schools, which, some time ago, began to gradually change the organization, school time and space for teaching in ways that would encourage pupils to take an active role in teaching –learning processes. The Avanguardie Educative movement currently includes 416 schools that are trying out the ideas, with support from the advanced schools and INDIRE, aided by a blended coaching process designed to build a professional community of practice.

Keywords: *scholastic innovation models, community of practice, innovation experiences, blended e-learning, teaching –learning practices*

1. Introduction and background: innovation processes in schools

Nowadays, it is increasingly necessary to rethink the school model so that it satisfies the needs of both the knowledge society and the pupils who are immersed daily in new technologies, new forms of communication and learning, as well as the creative building of knowledge (Ito et al., 2010). It is indispensable to revise models of teaching/learning, organization and management of teaching in relation to spaces, time and roles, to transcend a model characterized by the unidirectional transmission of knowledge, a rigid timetable, the structural limits of the classroom with its serried rows of benches and fixed furniture that makes it difficult to seize the opportunities offered by information and communications technology (ICT) and digital languages. It is therefore necessary to design learning environments that favour a reticular approach to knowledge plus types of collaboration and cooperation that help in building and discovering know-how –learning environments that are open and flexible, deliberately laid out by the teacher, featuring a variegated repertoire of resources, including digital varieties, along with appropriate techniques, strategies and scaffolding instruments (Falcinelli, 2012). Therefore, in addition to the traditional lesson centred on the transmission of knowledge, it is important to offer different types of teaching activities orientated towards problem-solving, learning-by-doing and reflective learning (Rivoltella, 2013), all of which encourage the activation of a significant cognitive process that stimulates critical and creative thinking as well as metacognitive capacities (Ausubel, 1968; Bruner, 1996; Novak, 1998; Jonassen, 2008).

However, to foster these processes of transformation and innovation in the school system, it is necessary to transcend a pyramidal centralized reasoning of the top –down variety to develop the participative and collaborative dimension of the players in schools, working synergically to promote change and innovation, set up school networks fostering communities of practice among teachers in support of reasoning that can also create room for bottom –up strategies. As pointed out by the Organization for Economic Cooperation and Development (OECD, 2013), supporting innovation processes also means starting out from educational research and analysis of concrete innovative experiences in schools. In fact, social innovation studies (Murray, Caulier-Grice & Mulgan, 2010) describe an innovation process that starts from experience and develops towards systemic change, also in a non-linear way. These same studies also inspired the project “SCALE CCR: Up-scaling Creative Classrooms in Europe”, carried out by the European Commission's Joint

Research Centre –Institute for Prospective Technological Studies (JRC-IPTS), which researched into new technologies while focusing on improving the understanding of the kind of innovation that could be implemented on a large scale with a systemic impact (Kampylis et al., 2013; Bocconi, Kampylis & Punie, 2013). One of its research reports, which presented an in-depth analysis of international case studies, pointed out how scholastic innovation can be rooted in a particular context if it is born at a local level and is sustained by bottom –up type strategies, through a process that is simultaneously centralized and decentralized. Only after this rooting in a specific context can its dissemination on a wide scale be promoted and consolidated by a central body, also by intervening with a top –down approach that echoes more centralized strategies for optimal usage (Fig. 1) (Kampylis et. al., 2013).

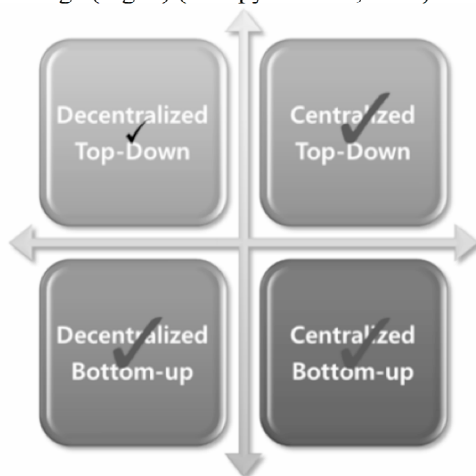


Fig. 1. Strategies to implement and refine an innovation system, from: Kampylis et. al., 2013

Just recently, the JRC-IPTS published a new report (Kampylis, Punie & Devine, 2015) which outlines the European Framework for Digitally Competent Educational Organisations (DigCompOrg), i.e. a framework designed to support educational organizations in reflecting on and evaluating their own paths of innovation and, as a result, becoming a reference point to help schools reorient these processes in an efficient way and improve. The framework features seven main cross-sector thematic key elements and sub-elements with related descriptors, as well as an additional element (unspecified) dedicated to the particular needs arising from application of the framework (Fig. 2): teaching and learning practices; professional development; assessment practices; content and curricula; collaboration and networking; infrastructure; leadership and governance; and sector specific.

Each thematic key element is just as important for the promotion of innovative processes as the interconnections between these elements. Among the dimensions indicated, some are particularly linked to innovation processes in teaching and learning. Certainly those dedicated to “Teaching and learning practices” and “Professional development” insist on the necessity to adopt innovative teaching practices, made possible also by digital technology and usable both inside and outside the school and for formal and informal learning. It is important to integrate such digital technology with daily teaching practices, promoting active ways of learning based on learning-by-playing, learning-by-exploring, learning-by-creating and learning-by-doing. The teacher’s role is established as a facilitator of learning, enhancing the building of knowledge, also through collaboration, as well as the development of skills, while focusing attention on socio-emotional aspects and fostering creative learning –a teacher who is constantly busy with his or her professional development and who can exploit multiple approaches to education with the support of the school, including forms of coaching and mentoring. The same thematic key elements devoted to “Collaboration and networking” emphasize the importance of networking and communities of practice that capitalize on their practices and sharing among a community of professionals engaged in a common mission of organizational and educational innovation, a mission to be supported and promoted at the scholastic level, and that also delineates a fundamental role for “Leadership and governance practices”.

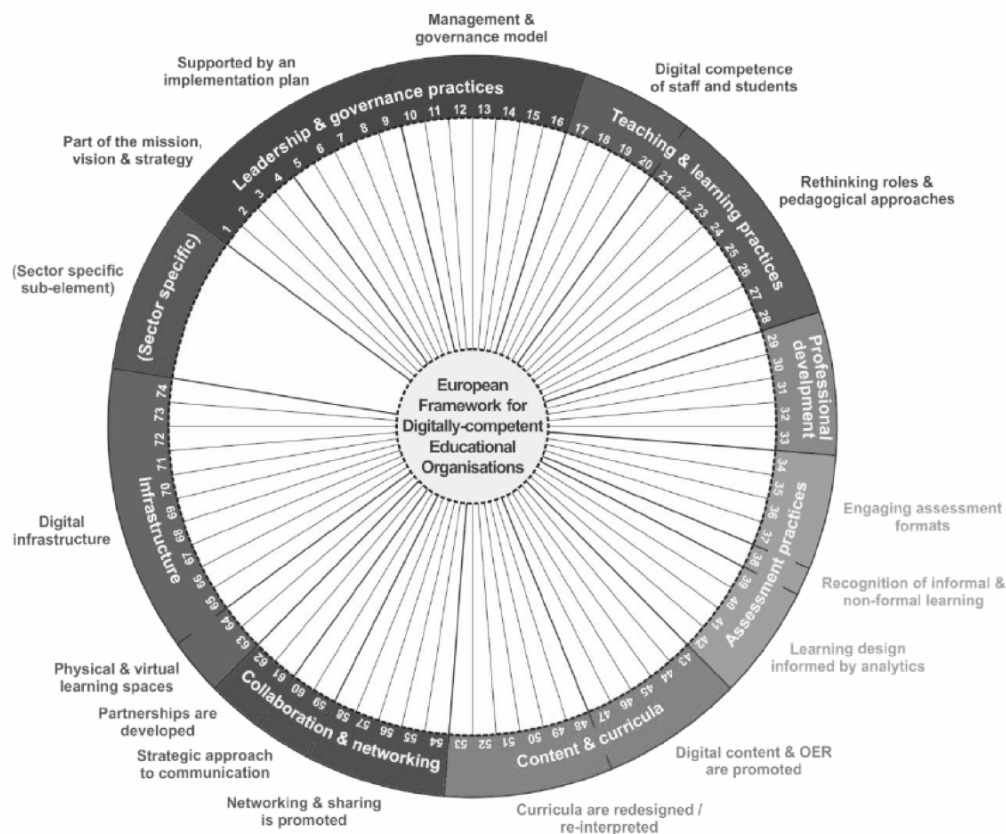


Fig. 2. Key elements and sub-elements of DigCompOrg, from Kampylis, Punie & Devine, 2015

The Avanguardie Educative (AE) framework takes into account the research perspectives described herein to study the implementation of innovative educational practices, understand how these can take root and be honed, and hence come up with an effective sustainable model to renew the school system. Therefore, encouraging the building of communities of practice and the sharing of valuable innovative teaching experiences aims to involve not only the single teacher and the single teaching practice, but scholastic institutions as a whole, school networks and national systems (Istance, 2015; Rivoltella, 2014).

2. The AE movement and the promotion of a community of practice for the professional development of teachers

The AE movement was conceived by INDIRE and 22 founder member schools (advanced schools) to gather the most significant experiences of organizational and educational innovation in Italian schools and encourage transformation of the traditional teaching–learning process, generally based on the lecture-based lesson, to set up learning environments that favour a reticular approach to knowledge plus types of collaboration and cooperation that help in discovering and building know-how (Falcinelli, 2012). In November 2014, INDIRE and the advanced schools signed a manifesto based on seven pillars that constitute the movement's vision and mission: transforming the lecture-based model of schools; exploiting the opportunities offered by ICT and digital languages to support new ways of teaching, learning and assessing; creating new spaces for learning; reorganizing school timetables; reconnecting the know-how of schools and the know-how of the knowledge society; investing in “human capital”, rethinking relationships (inside/outside, lecture-based teaching/peer learning, school/company, etc); and prompting innovation to become sustainable and transferable.

As new schools gradually join the movement, they are supported by the advanced schools and INDIRE through a blended coaching process, designed to build a professional community of practice.

In fact, from the research mentioned previously, it emerges that in order to support, establish and disseminate innovative organizational and educational practices, it is fundamental to involve the school players, aided also by the possibility of interacting with colleagues in a professional community of practice. Indeed, it is vital to include a space (which can also be virtual) that enables the swapping of experiences so that head teachers and teachers can not only become familiar with and assess the decisions of other institutes but also make their own ideas known. In fact, as Rivoltella has reported, nowadays, the lack is felt of such a community in which to collect, share and comment on case

histories in order to promote a genuine innovation laboratory that allows valuable experiences to become systematized (Rivoltella, 2014).

AE has taken on this challenge to build such a community by making available to the schools and their players not only a repository of teaching practices, but an actual path in which education is not formulated in the sense of traditional training. In this path, a central role is played by the figure of the coach, a guide for teaching and procedure but also management and organization, played by the teachers and head teachers of the advanced schools who share their own practices, holding them up to the scrutiny and comments of the community while welcoming new proposals and ideas from schools that have newly set out on a path of innovation. The vision is to promote a community of professional practice that will gradually become organized and evolve in relation to its experiences and interests, even quite independently (ibid). In fact, professional communities learn by sharing routines and common practices, and above all, by prompting interaction between relatively expert participants and so-called “novices”. In fact, a school is a dynamic set of groups of people committed to tackling challenges they deem strategic for the community and within which there are various communities of practice, micro-communities that are often not immediately visible precisely because they are born in an informal way due to the players' interest in sharing a commitment, building a new mission and generating alliances (Fabbri & Melacarne, 2015). These are emerging structures, where “emerging” refers to the building of knowledge from the bottom up, which are not born from regulations or institutional wishes, but are generated and kept active by the participants' desire to share a repertoire of practices, a thematic field and a commitment (Wenger, 2006; Fabbri & Melacarne, 2015). As Loretta Fabbri has underlined (2015), organizational studies show how professional learning is generated precisely when participants enter the informal communities of colleagues as legitimate subjects, when new communities are built with the goal of finding a common way to manage a problem, share an idea and work together to establish a new practice.

3. The “Gallery of Ideas”

To promote, establish and disseminate innovative educational and organizational practices, as well as to support schools in implementing ways to transform and change traditional teaching–learning models, INDIRE has selected 12 ideas that make up a “gallery” of innovation experiences: Subject-related Classroom Laboratory; Flexible Spaces (Aula 3.0); Grade Retention with Course Credits; Block Scheduling; Technology-Enhanced Active Learning; Digital Educational Contents; Spaced Learning; ICT Laboratory; Flipped Classroom; Learning Scenario-based Teaching; Inside/Outside School; and Debate (for further information, refer http://avanguardieEducative.indire.it/wp-content/uploads/2014/10/schede_idee.pdf). These ideas have been observed within the AE movement's advanced schools and proposed to other participants considering that they are in line with the seven pillars of the manifesto and are seen as facilitating the implementation of innovation processes. In fact, every idea helps pursue AE's common goal, which is to rethink the school model so that it can satisfy the needs of a knowledge society in rapid evolution. These are experiences that place the active building of knowledge by pupils at the centre of the educational process, with the result that they become increasingly proactive and self-reliant within the learning schemes.

The movement is open to all Italian schools, which are free to test one or more of the ideas already present in the gallery at any time (Action: “Adopt an Idea”) but can also present new innovative practices (Action: “Submit an Innovation Experience”), i.e. experiences brought to fruition in their institutions, in line with the aim of the main instigators of the manifesto and in a position to affect the organization of teaching, time and space for education.

4. The coaching model

The coaching and mentoring model was derived from a collaboration between INDIRE and the advanced schools in January and February 2015, to offer schools taking part a blended training that is oriented towards a shared building of meanings within a community of practice (Wenger, 2006). The AE community is characterized by a common vision of the concept of scholastic innovation (described in the manifesto) and by the shared goal of encouraging transcendence of the traditional teaching–learning model, which is no longer suitable for today's generations of pupils and is out of synchronization with a knowledge society (Castells, 2006). As mentioned already, the coaching model has not been designed as a traditional training scheme, but as a learning process among peers of a collaborative type, because this preparation is the main channel for the sharing and dissemination of good practices and knowledge among teachers (Trentin, 2009). In this sense, the goal of AE is to support these processes and scale them up, to favour the sharing of, discussion about and reflection on experiences of innovation and good practices.

Indeed, this preparation resulted in the creation of “Guidelines for the Implementation of the Idea”, theoretical–operational documents containing, in addition to methodological premises and a bibliography for further information, a description of the characteristics of the idea, enabling/inhibiting factors and necessary instructions for correct implementation in class teaching.

In addition, the coaching model included, for the months of April and May 2015, the setting up of some “residential seminars” at the advanced schools to present the cultural scenario of AE to participating schools to make the

implementation of the idea a reality. These seminars took place using the workshop and group work formula and were moderated and coordinated by INDIRE researchers plus teachers and head teachers from the advanced schools. Following this face-to-face training phase (repeated in April–May 2016), INDIRE made available to schools an online environment to support participating schools with their experiments, encouraging the sharing and discussion of experiences.

Coaching activities (Fig. 3) are arranged as a series of opportunities, which schools that gradually join the movement can freely access; in particular, to guarantee these schools immediate entry to the scheme, an option has been created on the platform called “Entry Module” with contents that serve as an introduction to the movement's culture and a first familiarization with the online environment. The section called “The 12 Ideas” brings together documents relating to the “Guidelines for the Implementation of Ideas”, materials used during the residential seminars and video recordings of the webinars/open days, which are a characteristic of the support activities.

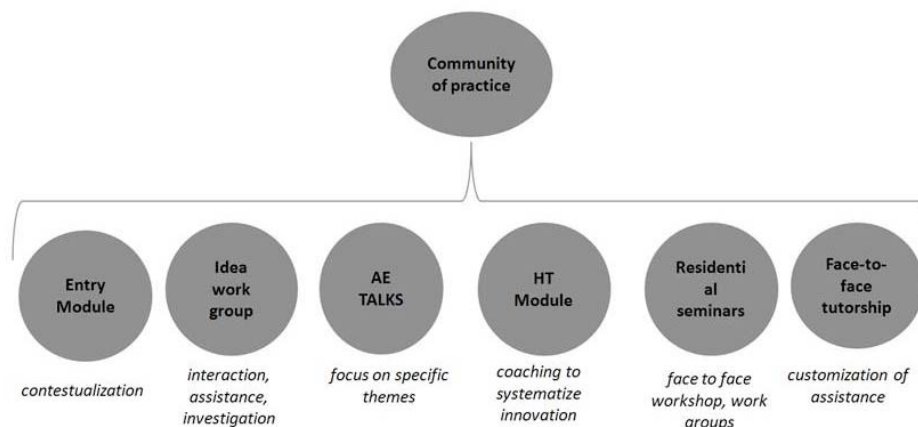


Fig. 3. Diagram summarizing the activities in the period September 2015–June 2016

The environment is divided into 12 work groups, each of them dedicated to one of the movement's ideas. In the period from September 2015–March 2016, at least four sessions (webinars) of online coaching and mentoring were organized for each work group. The webinars, which are an intrinsic part of the work group activities, are arranged in cycles and carried out in turn by the advanced schools and each concentrates on one step of the Implementation Plan (described later) adapted from the Deming Cycle (Deming, 1986). The contents of these online sessions are derived from the experiences of the advanced schools and respond to the needs of the participating schools. A statement of the needs of the participating schools is reached through an analysis of the communicative relationships within the community (interactions on forums or during webinars, surveys, etc) and from an analysis of the Implementation Plans.

The Deming Cycle envisages an organization of the online coaching and mentoring sections arranged as follows:

- Plan: the phase in which schools establish the objectives to be achieved by applying one or more ideas;
- Do: in this phase the schools are operatively busy in implementing the idea according to whatever was established in the Plan phase;
- Check: in this phase, the schools check and monitor the expected results, bringing out the strong and weak points from implementing an idea;
- Act: any corrections, improvements and stabilizations of the new performance levels. This is the moment when, through the checks carried out during the previous phase, the schools carry out corrective measures to guarantee effective implementation of the path of innovation.

In this process, oriented towards continuous improvement and the possibility for schools to continually update and revise the Implementation Plan, the participating schools are given support by the project coach, which they can report using the communication and sharing tools of the work groups or by requesting a visit instead.

The support activities also include the opportunity to attend “AE Talks”, webinars held by experts and researchers (both national and international), or by teachers and head teachers, and adopt the themes that involve the ideas most of use to all members of the community across the board. Themes dealt with at these events include the following: digital and media literacy, crowdfunding tools and strategies, processes and tools for scholastic innovation, computational thinking, Content and Language Integrated Learning (CLIL) and the teaching of foreign languages as well as opportunities for schools offered by the Piano Nazionale Scuola Digitale (Italy's “National Plan for Digital Schools”).

For head teachers –strategic figures in the change being promoted by AE –a dedicated part will be opened up within the online environment focusing on themes pertaining to the actions necessary to support and systematize innovation in scholastic institutions.

Since November 2014, when the AE movement began, it has been joined by 416 schools, all of which take part in coaching and mentoring activities (refer <http://avanguardieeducative.indire.it/#mappa> for the map), and platform users currently number 2,461, spread among the 12 work groups.

5. The Implementation Plan: an initial analysis of the process to implement innovative ideas

The Implementation Plan is a document that each school joining the movement is invited to compile to allow the INDIRE research group and the advanced schools to identify the main coaching and mentoring needs during implementation of the ideas adopted, as well as to better clarify the innovation idea schools are trying out.

This document has been developed as the result of a collaboration between INDIRE's Innovation Area and the Assessment and Improvement Area in accordance with the Improvement Plan model (“Piano di Miglioramento”) proposed by the Institute. By compiling a special online form available on the platform, the document allows schools to describe an overall strategy to implement the path adopted, to reflect on its feasibility and sustainability as well as plan its attainment following the four phases of the Deming Cycle (Plan, Do, Check and Act). In addition, the Implementation Plan makes it possible to describe the synergies between several ideas adopted, to appreciate the goals the individual schools intend to achieve as well as to reflect on the time frame within which each innovation will be completed (workflow/project management). The Implementation Plan may be continually modified, revised and updated by the schools and it performs a triple function within the AE framework in relation to the members (advanced schools, participating schools and the INDIRE research group) who are all part of the project. In particular, it is useful for the participating schools because it allows them to plan, monitor and analyse (and therefore reflect step by step on) the strategies and activities carried out to implement one or more ideas; for the advanced schools to obtain information useful to personalize the coaching and mentoring; and for the INDIRE research group to obtain data useful to understand the procedures that schools intend to use to implement their own innovation processes.

In this section, we present the analysis results of the first 54 Implementation Plans uploaded by the schools in the period September 2015 –March 2016. Because the school year was not finished, many schools have not uploaded their Implementation Plan yet. A follow-up of this analysis will be carried out later on.

In this analysis, we attempted to identify the dimensions proposed by the DigCompOrg framework in order to obtain a first, albeit partial, overview of the positioning of the AE schools compared to the European proposal of innovative organization and, hence, to the concept of scholastic innovation. The document analysis was done by using the Nvivo 11 software, which allows the user to tag the sources (Implementation Plans) and to organize them into new or existing nodes (categories). The analysis process was made up of the following phases: creation of the nodes (on the basis of the seven DigCompOrg key elements), the 12 AE ideas and the adoption strategy (single idea/multiple ideas); deep reading of the sources; as well as tagging of the sources by using the identified nodes. The thematic key elements that recurred most frequently were underlined in order to reorient the schools in the process of implementing innovative ideas and to recalibrate the support process. In addition, the ideas adopted by the movement's schools were mapped to identify the most common ones and plan the next activities in the environment. Particular attention was also paid to the type of adoption strategy chosen, whether it was a single- or a multiple-idea strategy, to understand both how the schools intend to proceed when planning their path of innovation and whether an awareness of possible relationships or links between ideas has emerged.

From an analysis of the Implementation Plans (fig. 4), it emerges that the most significant thematic key elements of the DigCompOrg framework of JRC-IPTS are “Teaching and Learning Practices” (No. 46) and “Collaboration and Networking” (No. 37). The teaching and learning practices described in the documents recall the schools' commitment to transcend the lecture-based model and focus on the active teaching and learning methods promoted by adoption of the “Ideas”. In particular, it was reported that the gradual introduction of digital technologies into daily teaching routines is an enabling element to encourage rethinking of the roles of the teacher and the pupil working in a learning environment oriented towards the promotion of competence, collaborative work and the active building of knowledge. In the case of “Collaboration and Networking”, the analysis pinpoints awareness of the importance of teachers' participation in networks and communities of practice to create occasions for training, sharing, discussion and development of practices. Moreover, this thematic key element also includes schools' recognition of the importance of creating relationships, collaborations and continuous contacts with local surroundings and affiliated stakeholders.

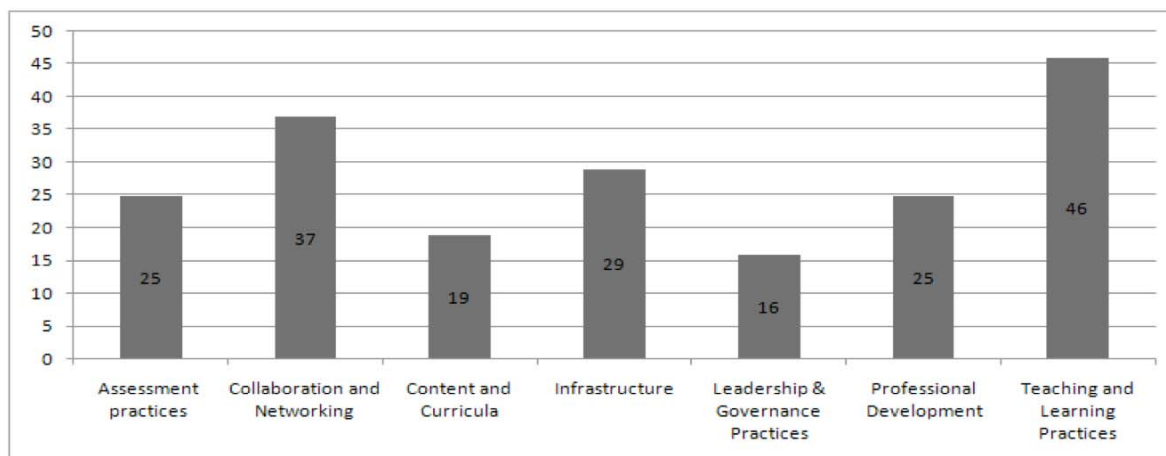


Fig. 4. Dimensions of the DigCompOrg Framework within the Implementation Plans

Instead, in Implementation Plans, the “Leadership and Governance Practices” (No. 16) element was less evident, an element that demands particular attention, because without the sharing of a culture of innovation and a well-defined strategy, there is a risk of creating “islands of innovation” (Bocconi, Kamylyis & Punie, 2013), which are then unable to establish themselves, to spread and become lasting.

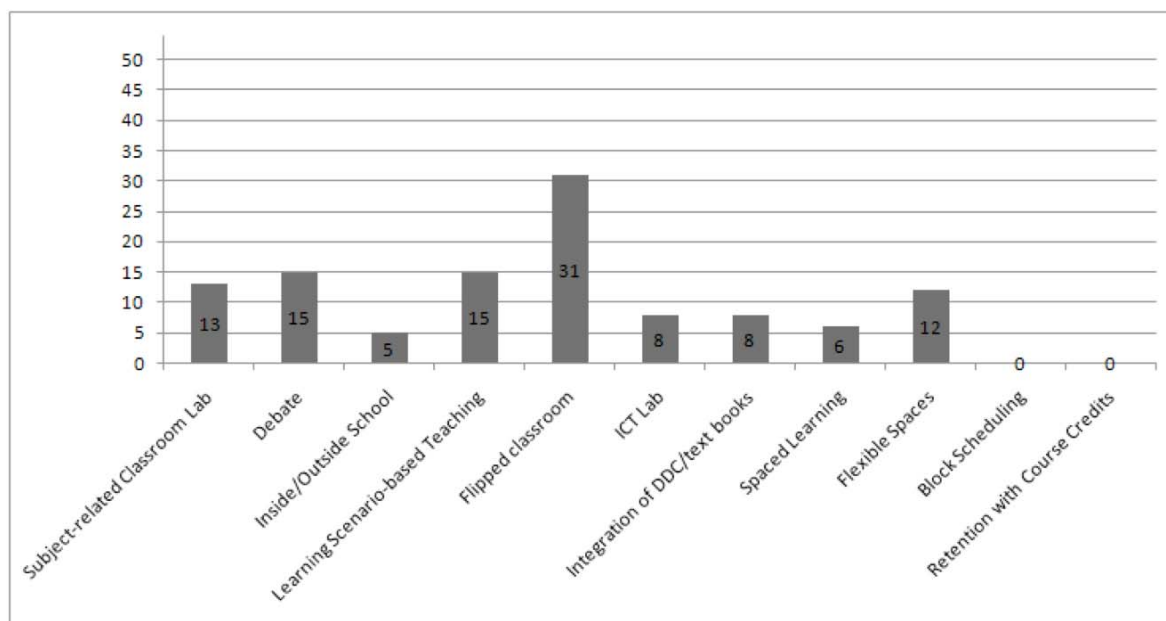


Fig. 5. The Avanguardie Educative movement's ideas within the Implementation Plans

The most widespread ideas among the AE movement's schools (fig. 5) are those that involve teaching–learning practices: the Flipped Classroom (No. 31), Learning Scenario-based Teaching (No. 15) and Debate (No. 15). The data, consistent with the schools' choice to invest in innovative teaching–learning processes that foster an active role for pupils, should be interpreted taking into account the feasibility of these ideas, which can easily be integrated promptly into daily teaching practices even with a restricted group of teachers and are based on a well-defined methodology. Thereafter, the AE schools follow the ideas that affect the dimension of space: the Subject-related Classroom Labs (No. 13) which see classroom settings being customized according to subject, and Flexible Spaces (No. 12), which envision a reorganization in terms of opening up outside the class and also transform its physical appearance by tangible modifications to furniture layout. This underscores how schools are increasingly aware of the importance of rethinking spaces, places and scholastic architecture in order to plan flexible learning environments that are multifunctional, modular and easily rearranged according to the activity being carried out, as well as being able to fit increasingly varied contexts (Fierli, 2013).

Two ideas were not reported in the documents: Block Scheduling and Retention with Course Credits. This should be interpreted in the light of two considerations: when compiling the Implementation Plans, the coaching and mentoring activities of the Retention with Course Credits idea were not completely implemented, while for the Block Scheduling

idea, correct implementation requires preparation before the school year begins and necessarily involves the entire scholastic organization.

Another significant fact is the adoption strategy: in fact, 35 schools declared that they had chosen a multiple-idea strategy, which envisages the implementation of several ideas while creating relationships between them. The introduction of one single idea is an occasion for schools to start reflecting and initiate dynamics of change within the scholastic institution, but on its own, the idea does not possess the strength to transform traditional organizational and educational models and make them lasting. In fact, the experience of the advanced schools underscores that space, time and teaching are all intimately related, and the introduction of a change in one of the three dimensions is a departure point for the gradual transformation of the others, too. When a process of change is begun in a complex system, it ends up affecting all of its constituent elements (OECD, 2015; Fierli, 2013; Murray, Caulier-Grice & Mulgan, 2010).

6. Research prospects

When innovation is developed starting from isolated and uncommon teaching practices, it is difficult for it to become a structural and systematic element that will affect the transformation of the school model. To delve deeper into this aspect and support schools in a systemic change that can begin from the bottom but also be recognized institutionally, research that pursues the following goals has been initiated:

- outlining the concept of scholastic innovation in AE schools starting from the DigCompOrg Framework and analysis of Implementation Plans;
- analysing how innovation processes establish themselves and become scaled up in AE schools;
- investigating how individual innovative ideas are put into practice, to identify both original paths with respect to the proposals from the advanced schools as well as procedures to disseminate the experience within each single school;
- describing possible paths of innovation through analysis of case studies.

With its 416 schools, AE is a privileged observatory to investigate aspects that are currently being analysed using a mixed-method research procedure (Creswell & Plano Clark, 2011), which includes the use of semi-structured questionnaires in all the schools involved in the movement, interviews and focus groups, with a panel of head teachers and teachers selected on the basis of the maturity, extent and consolidation of the innovation process, as well as through observation visits to the schools.

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