# INTEGRATED TEACHER TRAINING TOOLS FOR THE PROMOTION OF EMBODIED INCLUSIVE SKILLS

# FORMAZIONE INTEGRATA DOCENTI COME STRUMENTO DI PROMOZIONE DI COMPETENZE INCLUSIVE INCARNATE

**Valeria Minghelli**[1]
University of Salerno
vminghelli@unisa.it

**Valentina D'Auria**[2]
University of Salerno
vdauria@unisa.it

**Filippo Gomez Paloma**[3]
University of Macerata
filippo.gomezpaloma@unimc.it.

**Abstract**

The complexity of the current scenario in the field of inclusion poses continuous challenges that require teachers a capacity to choose inclusive strategies *embodied*, constitutive of the teaching action of the teacher (Rivoltella & Rossi, 2017). The processes of university education are changing in consideration of the growing need of the teacher called to face the complexity (Sibilio, 2020) of inclusion also in the light of the dialogue with neuroscience (Kandel, 2008).

The contribution presents the preliminary results of an exploratory study, with the aim of investigating the potential of the constituent elements of the *Integrated Teacher Training Embodied based* on learners' perceptions (n 111) enrolled in workshops for the support of kindergarten, in which the model was implemented. This recognizes equal dignity to the constructs of cognition, perception/action and emotion and enhances the interaction within cognitive processes. The model promotes an experiential recursive theoretical practical approach, in order to mark somatically (Damasio, 1995) the experience and thus determine «a kind of wisdom derived from the body» (Caruana & Borghi, 2016, p.73).

La complessità dello scenario attuale in materia di inclusione pone continue sfide che richiedono ai docenti una capacità di scelta di strategie inclusive incarnate, costitutive dell'agire didattico del docente (Rivoltella & Rossi, 2017). I processi di formazione in ambito universitario stanno mutando in considerazione del crescente bisogno del docente chiamato a fronteggiare la complessità (Sibilio, 2020) dell'inclusione anche alla luce del dialogo con le neuroscienze (Kandel, 2008).

Il contributo presenta i risultati preliminari di uno studio esplorativo, con l'obiettivo di indagare le potenzialità degli elementi costitutivi della *Formazione docenti Integrata Embodied based* a partire dalle percezioni dei discenti (n 111) iscritti ai laboratori per il sostegno della scuola dell'infanzia, in cui è stato implementato il modello. Questo riconosce pari dignità ai costrutti di cognizione, percezione/azione ed emozione e ne valorizza l'interazione all'interno dei processi cognitivi. Il modello promuove un approccio ricorsivo teorico pratico esperienziale, onde marcare somaticamente (Damasio, 1995) l'esperienza e determinare, così, «una sorta di saggezza derivata dal corpo» (Caruana & Borghi, 2016, p.73).

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[1] Author of paragraphs "Introduction: the role of the teacher: between educational requests and training needs"; "1. Needs, frameworks, constitution of the EC based approach"; "2. Constitutive elements of the TPE EC-based approach"; "5. Discussions"; "Conclusions and future perspectives".

[2] Author of paragraphs "3. Research design"; "3.1 Research method, sample and data collection"; "3.2 Operational definition and measurement"; "3.3 Data Analysis"; "4. Results".

[3] Scientific research Supervisor.

**Introduction: the role of the teacher: between educational requests and training needs**

The change in legislation on disability (Legislative Decree 66/2017; Legislative Decree 96/2019) and on Special Educational Needs (Ministerial Decree 27/12/12; CM No. 8 of 2013) imposes a new way of interpreting and promoting inclusion in school. This one, in fact, has to respond to a ever-changing complexity and a perpetually growing training need determined by a variety of factors, which involve a new way of understanding teaching. In light of the perspective promoted by the *International Classification of Functioning, ICF*, disability cannot be traced back to the ontological dimension of the subject alone but is to be understood as the result of an interaction process between the individual and the environment in which he is living (WHO, 2001), which co-evolves with it. In this perspective, the context, which must act facilitating the functioning of the subject in terms of *activity and participation* (WHO, 2001), assumes a fundamental function to determine the development and outcomes of the disability itself.

In this persistent legislative process that tries to systematize and guide inclusive practices in a reality that, however, responds to *complex non-linear logics* (Sibilio, 2020), the teacher is called to fulfill multiple tasks: educational, didactic, inclusive but also organizational-systemic.

It is clear how much the editing of new "documents" alone is not enough to promote change: the real axis of inclination around which a real inclusive paradigm revolves is constituted by the teacher called to pursue for all and every one, the achievement of *educational success* and *bio-psychosocial well-being* (WHO, 2001), pursuing the principles of *self-determination* and *quality of life* (Schalock & Verdugo Alonso, 2002; Giaconi, 2015). «The school and its teachers can and must help the student with a deficit to find their own path in the world» (D'Alonzo, 2018, p. 1065).

Regarding the factors intent on significantly affect the *life project* (Legislative Decree 66/2017), the school, in particular the kindergarten, represents a privileged place for inclusion in which «the destinies and the foundations are laid» for the future social life (D'Alonzo, 2018, p. 1065). A key role must therefore be identified in this primary school order in promoting inclusive and virtuous preventive processes capable of taking root and developing longitudinally in subsequent education levels. It is necessary to recognize to "all" the teachers the honor and the burden of constituting themselves as *levers of change* (Ainscow, 2005) «[...] strategic agents of social and school inclusion processes for which, it's fundamental a specific training that can provide them the skills necessary to translate the founding principles of inclusive logic on a praxic level» (Aiello et al., 2016, p. 13). Together with the disciplinary, methodological and specialist skills, the inclusive competence of the teacher is constituted as an indispensable dimension of teacher training that cannot be reduced to a mere theoretical treatment of possible inclusive strategies, nor to the mere adoption of design models and different tools, but it needs to be studied, observed and acted upon, experienced and therefore understood, in a word, *embodied*.

This renewed educational scenario requires changing awareness and multiple skills to all those subjects appointed to promote inclusion: from school to the clinical/habilitation field, up to academic contexts, institutionally responsible for the training of teachers.

This one, already the subject of attention in Law 107/2015 and in the context of the fourth Mission of the National Recovery and Resilience Plan (PNRR), is considered internationally by the European Agency for Development Special Needs Education (EASNIE, 2012), a predictive factor of the quality of inclusive processes. However, it is necessary to reflect on what are the ways to promote a real and effective implementation (EASNIE, 2014). The literature underlines how much training must invest the personal and value dimensions of the teacher, consisting of attitudes, opinions, perceptions and concerns towards inclusion, as well as the perception of self-efficacy that affects the real ability to decline good inclusive practices (Murdaca et al., 2016; Aiello et al., 2016).

In fact, inclusion appears in the teacher's ability to make continuous adjustments to his own *didactic corporeity* (Sibilio, 2011; 2020; Gomez Paloma, 2009; 2015) and to the context, according to the child's "signals", expressions of his *special need*. The teacher is required to be able to establish and promote an effective interaction in the class group in which reciprocity of the relationship and communication are

favored: an educational relationship in which the empathic capacity of the teacher is essential, to know how to recognize the intention of the child, an essential expression of its subjectivity, its "functioning", its being in the world and restoring its value and effectiveness, in order to support the «development of key behaviors that can favor the acquisition of knowledge and skills and personal autonomy» (Di Gennaro et al., 2016, p. 149).

These skills depend not only on disciplinary knowledge and teaching methodological skills, but also on the ability to feel and understand the peculiarities of explicit and implicit inclusive practices conveyed "by and through the body" in relation, by personal dimensions (values, beliefs, attitudes, attitudes), from the confidence in one's own resolution abilities (Aiello et al., 2017) and from the perception of self-efficacy (Alghazo et al., 2003; Boyle et al. 2013).

It is indispensable, in thinking about training, to stimulate and refine the knowledge produced in practice by the practices that are constituted by the teacher's thought, professional gestures, acts, actions, looks that for the most part do not pass through explicit communication (Perla, 2010) and which are often unconsciously acted upon by the same actors in the educational action.

On the basis of these considerations, an Integrated *Theoretical Practical Experiential Training approach* based on *embodied* awareness (TPE EC-Based) has been structured and implemented as a tool for the strengthening of teachers' embodied inclusive skills, in consideration not only of the duty but also of the primary inclusive power of the teacher, starting from a reconsideration of the personal and interpersonal, individual and intersubjective dimensions that are generally neglected. The contribution examines the potential of an *EC-based TPE training* with the aim of acquiring information about the effects of training on motivation to participate, ability to choose inclusive strategies, perception of self-efficacy of the teacher, perspective on inclusion.

### 1. Needs, frameworks, constitution of the *EC based* approach

The complexity of the educational context often determines a detachment between what is hoped for in theory and what is implemented in practice, especially if one loses sight of the real focus of educational, didactic and training interventions. That is the need to promote real inclusion in the classroom context, difficult both in design and in implementation, destined to be generalized in different social contexts, along the life plan of each one. This requires that there is, in those who are responsible for promoting inclusion, a profound awareness of what is underlying the paradigm of inclusion at various levels: from legislation, to didactic strategies, up to the consideration and awareness of the implications of own bodily action, of the teacher's own morphology on inclusive practices, which require sudden and changing coping skills capable of significantly determining the fate of effective relationships and interactions between child and teacher and between children.

The EC-based approach aims to promote an embodiment of the contents and constructs underlying the declination of inclusive good practices, to be acquired as part of training experiences "in, from and with one's body" in relation, action and training.

Starting from the assumption for which cognition is *embodied (*Wilson & Golonka, 2013), the aim was to promote the reconsideration of teacher training processes by giving a focus to the personal/individual dimensions that are the basis of the relationship and intersubjective exchanges with others (Gallese, 2003; 2005; 2014), also through a reconsideration of the role of corporeality (Damiani et al., 2021).

In the light of the reflections coming from the *Embodied Cognition Science* approach, corporeality plays an important support function, in cognitive processes, favoring the construction of knowledge, understanding and representation of contents, involving the subject globally within the formative process.

The *Theoretical, Practical, Experiential Integrated Training* of the future special needs teachers, structured according to the theoretical paradigm of *Embodied Cognitition* (TPE EC-based) (Gomez Paloma & Damiani, 2015; Damiani et al., 2021; Minghelli & D'Anna, 2021), places the reflections in the light of the dialogue between the neuroscientific, pedagogical and training fields, in order to critically capitalize on their implications (Sibilio, 2020).

Even with due caution, in the didactic and training field it's no longer possible to ignore the reflections derived from the identification of *mirror neurons* (Gallese et al., 1996; Rizzolatti et al., 1996), from which come new awareness of intersubjectivity, embodied simulation, empathy, emotional sharing (Gallese, 2003; 2005; 2014). These are all global instruments of investment and valorization of the teacher, which determine his posture, a «personal conduct […] a wisdom derived from the body» (Caruana, Borghi, 2016, p. 73). In the context of intersubjective relationships, the body becomes an essential pre-reflexive and preverbal vehicle, which allows the transfer of meanings from one person to another (Gallese et al., 1996; Rizzolatti et al., 1996; Gallese, 2007). The concept of bodily-format representation well describes the ability of the body to construct itself as a tool to understand a quantity of concepts and constructs that far exceeds, even in numerical terms, what we could describe, understand, deepen with a purely oral and theoretical approach (Goldman, 2009; Caruana & Borghi, 2016).

Therefore, especially in teacher training based on inclusive practices, the active involvement of the body, the observation of arrangements and postures, the organization of the timing of the relationship are essential in order to facilitate the understanding of unspeakable representations and concepts exclusively through the linguistic channel.

The ability to understand, even through the body, refers to another main ability of the teacher: to take the point of view of others. The concept of empathy masterfully described by Alain Berthoz (2004) as an "out-of-body experience" thanks to which the subject moves away from his own body to place himself in that of others, returns the image of the teacher who, in the relationship with the child, is able to grasp its intentionality, to attribute it a shared meaning and to share, within the field of this meaningful relationship, emotions and sensations that serve as reinforcement of experiences.

During the latter, in fact, each individual perceives in order to act, and this perception is determined by how the subject intends to act (Glenberg et al., 2013), therefore perception and intentionality are closely interrelated and, in cognitive experiences «[...] perception is at the base and takes precedence» (Gallagher & Zahavi, 2009, p. 23). In this perspective, knowledge and learning acquire a strong perceptual-motor connotation that uses all sensory channels, actively involving the body, its past (memory), present (perception) and future (affordance and prediction) in relation to the environment and to others.

Even in the context of learning and training processes, multisensory stimulation causes brain areas already connected to each other to establish further connections if excited simultaneously and when the same experience is repeated several times (Gombrich, 1970). In this perspective, the cognitive process is not reduced to a processing of information but is the result of a constructive and selective process strongly dependent on previous experiential experiences, intentions, emotions and motivations underlying the cognitive action itself. It is therefore necessary to conceive the teaching-learning process as an experience of co-construction of knowledge, which recognizes the peculiarities of each one's cognitive and experiential baggage.

The TPE approach assumes and promotes, in this sense, a multi-perspective vision that recognizes and enhances the existing circular dialogue, in the learning processes, between cognitive, experiential, bodily and emotional dimensions (Glenberg, 2008; Barsalou, 2010 ; Gallese, 2005; Caruana & Borghi, 2016) in order to outline the most effective training courses in the three key dimensions of the embodied paradigm: cognitive, bodily and emotional, which jointly and significantly determine the teaching action of the teacher (Rivoltella & Rossi, 2017).

Integrated training aims to activate reflections on those bodily aspects of the relationship in order to train the future teacher to a "competent and responsible" ability to observe the "dispositions and proximity between bodies" (Gomez Paloma & Damiani, 2015, p. 54), and effective mediation of the relations conveyed "by and with the body".

## 2. Constitutive elements of the TPE EC-based approach

The EC-b approach is defined as integrated in that it provides for the articulation of each meeting, according to a recursive order divided into three phases that are not hierarchically placed between them:

theoretical training, practical-experiential workshop, final discussion. Each of them aims to influence and in turn to be influenced by the others, through *reflective practices* (Schön, 1993) aimed at activating metacognition.

The *theoretical phase* occupies the first part of each meeting and consists of a discussion of the specific contents of the workshop placed in continuity with the inclusive principles. The theoretical training aims to stimulate *meaningful learning* (Ausubel, 1978), through continuous references to previous learning, and systematic reflections that relate the contents and experiences of learners or the situations of real contexts, with the aim of linking learning to the learning needs of learners in order to bridge the gap, already at this stage, between theory and practice.

The second phase of the meetings consists of *practical-experiential workshops*, which represent the *core* of the EC-b approach. These consist of *role-playing* situations, small group cooperation activities in the co-construction of *artifacts*; games that provide the active involvement of the body (even in remote mode); *peer to peer* situations in practical training experiences of "observation" of the child in the classroom context, through the use of *video-modeling* (Rossi, 2014; 2016; Impedovo, 2018; Marzano, 2019), with the *mediation* of the trainer (Damiano, 2013). The observation of complex real experiences allows the simulation of situations with the child and promotes the identification and active participation of teachers/learners, filling the *gap* between theory and practice (Kersting, 2008; Impedovo, 2018). These activities can involve from a multisensory and emotionally significant point of view the physical, emotional, cognitive and motivational dimensions of teachers/learners, activating situations of perception through vision and, consistent with the mirror system construct, favoring immediate referral to action, stimulating the ability to analyze, predict and choose possible strategies.

Each workshop day ends, finally with the *final discussion*, in which the teachers, in turn, are called to report to the group their point of view on the experienced workshops. To confirm how much the teaching skill is composed of identifying, personal and values elements, in literature the reflection on own *core qualities* is useful to «[... ] to consciously direct their professional development, establishing a harmonious link between their personal identity and their aspirations and enthusiasm for the profession» (Korthagen, 2004, p. 91). The sharing of personal perceptions respects the observation of some rules of communication, such as respect for the time of speech of their own and others, the suspension of judgment, the training of active listening and the exercise of positive feedback: this in order to refine the empathic and relational skills of each teacher and derive appropriate reflections on communication with and between children.

The last of the days of training hosts a last experiential workshop, or the *final restitution*: a digital artifact (Simondon, 2009), made by the trainer, consisting of a video with a collection of photos, audio, elements of the narratives resulting from the final discussions, which takes up and exploits the potential of feedback in the educational field and aims to return in the concept of educational care and taking charge of the teacher himself. The "final video" is an autobiographical narration of workshop experiences aimed at giving back to teachers/learners the effectiveness of their dedication and, indirectly and recursively, of the "restitution" which stimulates further reflection on the importance of feedback (Rossi et al., 2018) as a means of recognition, taking charge of the individuality of each and the personalization of training paths.

The EC-based TPE Integrated Training has as its main objective the possibility of generating in the learner awareness and *skills embodied*, strongly linked to the concrete and simulations experiences, activated within the workshops, «so that the elements of cognition are linked to the experiential and pragmatic ones in order to guide future decisions, leaving a sensitive, tangible and emotionally significant trace in the bodily memory of each learner» (Minghelli & Damiani, 2021, pp. 232-233).

### 3. Research design

In recent years, some preliminary exploratory studies have been carried out (Minghelli et al., 2021; Damiani et al., 2021), during which the structuring of the constituent elements of the EC-based integrated training approach has gradually been defined. In this study we are analyzing the perception of students

registered in the workshops of the Specialization Course for Support for Kindergarten with concerning the design elements, the constituent phases of the approach and the EC-based Training in general.

In relation to the basic constructs of the EC-based approach, a questionnaire was structured to detect the perception of the suspects with reference to each of its constituent elements. The aim is to investigate the potential of EC-based TPE integrated training, implemented within the workshops of the courses for support. In particular, specific attention was directed to the understanding of the impact on a) motivation to participate; b) ability to choose inclusive strategies; c) perception of self-efficacy of the teacher; d) the teacher's perspective on inclusion and disability.

## 3.1 Research method, sample and data collection

The study adopted a qualitative-quantitative approach, for which an online survey with closed-ended and open-ended questions was structured and administered. The latter have allowed to deepen valuable aspects for research, such as impressions and perceptions of teachers/learners freely expressed. The qualitative part is based on the analysis and interpretation of the answers provided by the sample in the open-ended questions. Finally, on the basis of the same answers, an analysis of the content of the first type is still in progress (Rositi, 1988). Part of the preliminary results will be analyzed and discussed in the following sections.

### *Sample*

Through a procedure of non-probabilistic sampling has been identified a sample of convenience, formed by all teachers/learners, registered in courses for support, immediately available to participate in the study.

"Surveymonkey" is the hosting site that allowed to spread the web survey through a sharing link to all participants. The average time required to fill it in was about 15 minutes. Overall, 111 responses were collected in June 2021. Table 1 shows the distribution of the sample involved on the basis of gender, age and Qualification/Specialization variables.

| | | Frequency |
|---|---|---|
| **Gender** | Man | 2 |
| | Woman | 109 |
| | Total | 111 |
| **Education** | *High School Diploma* | 54,7% |
| | *Health Care Area Degree* | ,9% |
| | *Scientific Area Degree* | 1,7% |
| | *Social Area Degree* | 4,3% |
| | *Degree in Humanities (Pedagogy, Psychology, Education Sciences, Formation Sciences)* | 21,4% |
| | *Other Degree in Humanities (e.g. Geography, Humanities, Figurative Arts, Philosophy, Religions, Historical Sciences, etc.)* | 6,8% |
| | *Other type of Education (Specialization support on other competition class)* | 4,3% |
| | *Other training in education* | 6,0% |
| | | 100,0% |

Tab.1 Sample description

## 3.2 Operational definition and measurement

The operational definition of the analyzed variables took into account the different nature of the constructs of the EC-Based method. All variables were collected from a mix of open and closed and multiple-choice questions. Each respondent was asked to assess their degree of agreement with some statements present in 1-6 batteries in Likert Scale (from "Totally Disagree" to "Totally Agree") and to evaluate the importance attached to certain aspects of the workshop carried out through a battery of Cantril Scale 1-10 (from "Not important at all" to "Totally important"). The open-ended questions were intended to deepen the theme of the perceived effectiveness of the approach, leaving the opportunity to motivate

the responses in order to extend the reflections on its strengths or weaknesses, taking into account also elements not detected by the closed question section.

### 3.3 Data Analysis

The data analysis was divided into two main phases. First, through the use of SPSS 23, an univariate analysis was carried out to explore the quality of the data and obtain the preliminary results of the investigation. Secondly, attention was paid to the answers collected in the open-ended questions in the questionnaire. In this regard, a qualitative interpretative analysis has been carried out on them, aimed at selecting the salient content useful for guiding future research choices. Finally, the same answers were used to carry out an analysis of the first type of content (Rositi, 1988), with the aim of reducing the complexity and breadth of the information collected. This type of analysis allows the deconstruction of texts into a limited number of categories through the use of analytical decomposition, classification and coding procedures (Weber, 1990).

### 4. Results

Through a careful univariate analysis was investigated the dimension related to the effectiveness perceived by teachers/ learners concerning the impact of integrated training during the course. Respondents were asked to evaluate their perception of the importance of the constituent elements of the approach on a scale of 1 to 10 (where 1 is "Not at all important" and 10 "Totally important") (tab.2). The average of all items shows very high values, all close to the maximum score (10). Items with higher values include: "Performing activities that involve emotions" (9.49) and "Practical-experiential workshops" (9.36) as an evidence of how the practical experiential workshops that distinguish the approach are useful to characterize a teaching that is based on personal/emotional involvement and practical experience. Moreover, the values connected to the standard deviation are all relatively low, indicating the absence of excessively dispersive values: in other words, respondents agree on what was expressed.

| *How important it was to you during the training* | | | |
| --- | --- | --- | --- |
| | *N* | *Media* | *Dev. std.* |
| *Carry out activities that involved the involvement of the body* | | **8,98** | 1,43 |
| *Engaging in activities involving emotions* | | **9,49** | 1,07 |
| *The practical-experiential workshops* | | **9,36** | 1,22 |
| *The final discussions, at the end of each day* | | **8,92** | 1,56 |
| *Intermediate / final returns (audio-video-photo collection, narration of experiences)* | | **9,23** | 1,29 |
| | 111 | | |

Tab. 2 Perceptions concerning the constitutive elements of the laboratory

*The relational workshop of the first day was useful:*

| | N | Media | Dev. std. |
|---|---|---|---|
| *To make you feel part of a group* | | **5,34** | ,94 |
| *To combine your personal and interpersonal dimensions (with other colleagues and teachers)* | | **5,28** | ,92 |
| *For the purpose of your motivation to participate* | | **5,18** | 1,12 |
| | 111 | | |

*The practical-experiential workshops have allowed you to:*

| | N | Media | Dev. std. |
|---|---|---|---|
| *Perceive the emotions that are triggered during the activities firsthand* | | **5,45** | ,77 |
| *Experience firsthand the relational dynamics that are triggered among children* | | **5,41** | ,92 |
| *Develop pragmatic-organizational skills* | | **5,42** | ,86 |
| *Reflect on the strategies to be implemented at school* | | **5,63** | ,76 |
| | 111 | | |

*The final discussion on the lived experiences allowed you to:*

| | N | Media | Dev. std. |
|---|---|---|---|
| *Perceiving the importance of active listening* | | **5,58** | ,69 |
| *Giving meaning to the workshop experience* | | **5,50** | ,77 |
| *Obtain useful information for teaching* | | **5,68** | ,61 |
| | 111 | | |

*The intermediate and final returns (audio-video-photo collection, narration of experiences) by the teacher allowed you to:*

| | N | Media | Dev. std. |
|---|---|---|---|
| *"Perceiving" in the first person the concept of "educational care"* | | **5,53** | ,77 |
| *Feeling emotionally involved in the training experience* | | **5,64** | ,73 |
| *Having feedback that added value to the whole experience* | | **5,69** | ,62 |
| *Perceiving the effectiveness of the training experience* | | **5,61** | ,70 |
| *Also better fix the theoretical contents* | | **5,46** | ,87 |
| | 111 | | |

Tab. 3 Perceptions about the effectiveness of the effects of the individual constituent elements of the workshop

Concerning the constituent elements of the approach, part of the questionnaire aimed to investigate in depth each individual element. In Tab.3, the effects hypothesized for each constituent element are examined individually: the relational workshop, the practical-experiential workshops, the final discussion on the experiences experienced during the course, and the intermediate and final returns. Each element was part of the training of teachers/ learners. The investigated ones were asked to respond to some statements derived from the open responses of participants in the support workshops in previous experiences, both in presence and at a distance. These statements referred to the perceived usefulness of the individual constituent elements of formation on a 1-6 scale (where 1 is "Totally disagree" and 6 "Totally agree", while 3 is a neutral point). The univariate analysis, also in this case, returns results with very high averages (always around 5 out of 6). For each individual constituent element, compared to perceived usefulness, items with higher scores are: "To make you feel part of a group" (5.34) for the relational workshop; "Reflect on strategies to be implemented at school" (5.63) for practical-experiential workshops; "Obtain useful information for teaching" (5.68) for final discussion; "Having feedback that added value to the whole experience" (5.69) for intermediate and final returns.

| | N | Mean | D. St. |
|---|---|---|---|
| ***I believe that teachers need an experiential theoretical-practical training*** | | 5,28 | 1,27484 |
| ***If I had the opportunity to participate in other integrated training courses, I would gladly participate*** | 111 | 5,4234 | 1,03176 |

Tab. 4 Considerations on Theoretical-Practical-Experiential Formation

*Embodied based integrated training (theoretical-practical-experiential)*

| | N | Media | Dev. std. |
|---|---|---|---|
| *Effectively responded to your educational need* | | **5,25** | ,87 |
| *It has enabled you to develop skills that can be used in the workplace* | | **5,34** | ,79 |
| *It has allowed for you a better understanding of the theoretical contents* | | **5,30** | ,88 |
| *It stimulated in you reflections on relational dynamics* | | **5,43** | ,82 |
| *It has stimulated in you metacognitive reflections on your potential inclusive* | | **5,48** | ,79 |
| *It has positively affected your beliefs about inclusion* | | **5,49** | ,82 |
| *It has positively affected your perception of self-efficacy in inclusive practices* | | **5,49** | ,78 |
| | 111 | | |

Tab. 5 Perceptions on the repercussions of formation TPE EC-based

Tables 4 and 5 provide an analysis about teacher/learner feedback on other aspects of EC-based TPE training. Both tables asked respondents for their agreement on the items presented in the battery, in ranges 1-6. Tab. 4 was made up of several other items that were deleted because they were considered not useful for the purposes of this research. The range 1-6 (where 1 is "Definitely yes" and 6 "Definitely not") returns averages very close to the maximum value, with low standard deviation. From this emerges both the positive perception on the part of respondents regarding the opportunity of an integration of theoretical-practical-experiential training for all teachers (5.3), and their interest in wanting to participate in other opportunities for integrated training (5.4).

At last, Tab.5 highlights respondents' perception of the repercussions of EC-based TPE training (in a range where 1 is "Totally disagree" and 6 "Totally agree", while 3 is a neutral point). Again, the reported averages are very high (always >5) with low standard deviation.

### Qualitative data

The qualitative section provided for an analysis of the content of the open responses and wanted to deepen the theme of the perceived effectiveness of the model, also to verify that there was consistency between quantitative and qualitative data. For this purpose, an analysis of the content of the open replies was made, in respect of which the responses deemed useful to the research were considered (No 84). From a first observation of the preliminary analysis of the occurrences, currently in progress, it emerges more frequently the use of the terms "body" and "mind", as well as for the words related to the feedback expressed by respondents about the EC-based training model. In this case the most widely used keywords were: "effective", "involve", "important".

### 5. Discussions
### Quantitative date

Table 2 shows the data about the perceptions and opinions investigated by the questionnaire, regarding the constituent elements of the model: relational workshop; practical-experiential workshops; final discussion at the end of each day; intermediate and final returns, with the aim of identifying the potential of individual *"embodied tools"* in terms of utility. In particular the *relational workshop*, scheduled for the first day, is useful to nourish the relational aspects of the training. Students note the ability to make them feel part of a group and the utility in linking personal dimensions to interpersonal ones. Among the repercussions of the *experiential laboratory*, the latter is useful to reflect on the strategies to be implemented at school, to make people perceive first-hand the emotions and relational dynamics that are triggered in the school context, from simulation experiential situations (role playing and observations of real contexts). The *final discussion* would seem to be useful, in the perception of the investigated ones to derive useful information for teaching, recognizing the value of the mediation made by the trainer in directing the reflections and encouraging the expression of their point of view by the participants. Finally, the *final restitution* takes on the function of offering a feedback of content reinforcement, to give meaning to the experience, to involve the participants emotionally, offering them the opportunity to perceive the concept of educational care on themselves. This particular element has been repeated several times also in the qualitative data and in the final discussion conducted after the experiential workshop of the restitution: the students told that they felt "seen and recognized" within the training as subjects with specific characteristics, which have been enriched by experiences in groups. Moreover, in the final discussions, they declare that the restitution video has recomposed the elements of the training in a further dimension of meaning, of which they recognize the elements and reflections to be operated in a recursive way in the activities with children. From their statements emerges the potential of the video to involve them emotionally in a significant way, showing them an evolution of the group and staff, from the first to the last day of the workshop, making them perceive a cognitive, practical, and metacognitive enrichment

that has affected their personal opinions about disability and their inclusive potentiality, as a result of the experiences.

The results from Tables 4 and 5 confirm, in summary, what is desired by the objectives of the study about the potential of the EC based approach to positively affect: motivation to participate; perception of self-efficacy; beliefs about the inclusion; activation of metacognitive reflections; reflections on the elements of the relationship; development of skills usable in the workplace; better understanding of theoretical content effectively responding to the educational need of each.

### *Qualitative date*

The qualitative section intended, through a preliminary analysis of the content of the open answers, examining in depth the theme of the perceived effectiveness of the model, also to verify that there was consistency between the quantitative data and the free expression of their opinions.

The qualitative data have been useful to provide further information for a deeper interpretation of the quantitative section and a wider and deeper vision of the object of study, this also in order to be able to remodulate, in the event of discrepancies between quantitative and qualitative data, procedural and methodological aspects defining the best possible course of investigation. In particular, learners were asked to deepen the theme of the perceived effectiveness of the model, leaving the opportunity to motivate the responses in order to extend the reflections on its strengths or weaknesses. In the first instance, there is a preliminary survey of the occurrences of the most widely used terms in the open answers, which has already highlighted a certain continuity between the embodied constructs underlying the approach, research hypotheses and the constituent elements of integrated training. The deductive approach intended to identify recurrent keywords related to salient elements of speech: from the preliminary detection of occurrences, the words "body" and "mind" are mostly used to confirm the centrality of active body involvement in the training approach and its ability to also drive cognitive content. In addition, the occurrences have been traced back to some key words about the feedback about the EC-based training approach. In this case, the most widely used keywords seem to be in line with what is desired by the very structure of the approach that aimed precisely to constitute itself as "effective", "captivating", "important".

The following are some shreds of open responses considered to be most significant: *"The integrated training has made possible to make sense of the experience acquired previously and to activate further strategies relating to inclusion"; "(it is effective) because it is able to 'fall into reality' and make practical proof of the teaching practices"; "(education) has been able to move us and, paradoxically, make us live 'real' moments in a class"; "although I have not taken other courses of integrated training, I realized, following this course, that to place side by side the study with the see and touch with hand' you can internalize the concepts and make them own"; "This lab allowed us to reflect, to put ourselves in the shoes of children, to understand the importance of feeling effective in the learning process. By living the experiences firsthand, we had the opportunity to better understand our students and to understand how to better intervene in the future"* (Group V, Kindergarten).

Finally, a deconstruction of the texts into a limited number of categories has been carried out, which has made it possible to trace the words used, through a conceptual map and a subsequent categorization, to the constructs placed at the base of the approach (tab. 6).

| | | | |
|---|---|---|---|
| *personal and professional growth* <br> *modus operandi* <br> *be a teacher competence and passion* <br> *experience that has completed [...]* <br> *edifying* <br> *be a teacher* <br> *Personal growth* | **Personal dimension Morphology of the teacher** | *theory and practice* <br> *in practical experience the theory is concretized* <br> *strengthen learning* <br> *internalize the contents* <br> *action* <br> *practice* <br> *direct contact with the problem* | **Bridge theory-practice Perception-Action Affordance** |
| *body* <br> *mind* <br> *environment* <br> *emotions - emotional* <br> *involvement of the whole person* <br> *integral involvement* | **Integrated embodied-dimension Holistic experience** | *almost made live real situations* <br> *see and touch with hand* <br> *put yourself in the child's shoes* <br> *develop greater sensitivity towards each other* <br> *study and see to understand and internalize* <br> *understand the non-verbal language of the child* | **Empathy Observation - Mirror neurons action** |
| *attention* <br> *motivation* <br> *pleasant activities* <br> *motivating engaging and innovative* <br> *general welfare of the class group* <br> *effective* <br> *integral involvement of the person* <br> *active* <br> *sharing* | **Motivation Involvement Relation Somatic marker** | *Important repercussions with children* <br> *Making sense of previously acquired training* | **Metacognition Recursiveness** |
| *Effective* <br> *Making sense of experiences* <br> *Activate strategies* <br> *Useful strategies* | **Effectiveness Utility** | *Integrates the theory* <br> *To complement the training* <br> *Making sense of previously acquired training* | **specificity of the workshop** |

Tab. 6 Qualitative data: decomposition of texts into a limited number of categories

As can be seen from table 6, the ability of integrated training to influence the personal dimension and the morphology of the teacher has emerged as common elements between open responses, consistent with quantitative data; to involve in an integrated way the three dimensions embodied by offering the opportunity of a holistic training experience; to motivate and activate participation and to leave significant traces of the experience; to establish a bridge between theory and practice through direct perception experiences that have fostered a constant reference to action and the choice of inclusive strategies; to activate simulation experiences in which the ability to take the point of view of others and the empathic abilities have been stimulated; to promote metacognition. Another important element emerged from the open answers is that the learners declare that this type of training should be placed in addition to the training for support. This element offers the opportunity to underline how the experiential theoretical practical training is deliberately declined within the laboratories, which have the specificity of constituting themselves as a "bridge" of connection between theory and practice and which aim to be an opportunity to reinforce the theoretical content and specific training that are essential.

## Conclusions and future perspectives

The study aimed to understand the effects of EC-based TPE integrated training in terms of effectiveness in the promotion of *inclusive skills embodied*. As briefly shown in the tables and together with the results of the qualitative survey, the data appear to provide encouraging information about the perception of effectiveness and usefulness of the approach. Moreover, as already pointed out, there is a certain coherence between the constituent elements of the workshops, the objectives of the training and the perceptions and opinions of the investigated ones, both in the quantitative and qualitative sections.

Both dimensions of the survey allow to affirm that the integrated formation has favored an active participation, involving, and motivating of the registered ones to the specialization course.

The EC-b training approach, which originates from previous research-training experiences (Gomez Paloma & Damiani, 2021) and pilot experiments conducted over the years (Damiani et al., 2021; Minghelli & D'Anna, 2021) is being enriched itself by new elements and new reflections emerging from

the results of the most recent experiences. For this reason, the research takes advantage of the opportunities of the evolution of the approach, assuming and considering the risks inherent in exploratory investigations. Hence a necessary reflection on the critical points of the study. In this regard, the research needs to be extended to a larger sample and that the qualitative section needs to be extended to allow a more detailed survey of the real perceptions of respondents. The data return useful information that invites to continue with the search through the implementation of the model on a larger scale. Finally, the study offered useful reflections on the opportunity to investigate in depth opinions and attitudes towards disability and inclusion, as well as on some constituent elements of the approach results as particularly effective in the opinions found in this research. In this regard, it should be noted that the sample reached so far is about 400 teachers in training and that in the questionnaire, specific dimensions of investigation on disability and inclusion issues have been added, starting from the decomposition of the constructs of the ICF; as well as on elements of the approach resulting from this and the previous ones as worthy of study because identified especially in the open answers as elements of effectiveness: video modeling and the final restitution.

«The awareness about one's own inclusive potential acted in explicit and implicit practices [...] is an indispensable element in the constitution of the teacher's professionalism, particularly if the contents of knowledge concern reflections on one's own body, on emotions, on perceptions, in order to encourage the establishment [...] of effective patterns of action and interaction» (Minghelli & Damiani, 2021, p. 232). The research continues with the aim of understanding what are the main elements of effectiveness of integrated training, in order to define structures of replicability of an approach that is perceived by teachers as transformative of their ideas, of its own potentiality and effectiveness concerning the inclusion and, above all, the possibilities of functioning of the child.

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