



Teacher education is a deeply pedagogical process rooted in values, ethics, and the social purpose of schooling. Globally, it sits at the core of educational quality and fairness, as research in comparative and international education demonstrates: the training of teachers directly influences students' learning chances, social inclusion, and the democratic aims of schools. Teachers are not simply transmitters of curricula, but active professionals whose convictions, reflective skills, and ability to manage the complexities of classroom life give shape and substance to the educational experience itself.

The pedagogical dimension of teacher education frames teaching as a relational, context-aware, and ethically grounded profession rather than just a set of procedural skills. From a research perspective, this demands robust research methodologies that can critically examine the complex realities of schools and inform evidence-based policies. Equally important is the connection between theory and practice, which helps to bridge the persistent gap between universities and schools.

The contributions gathered in this volume reflect the richness and diversity of experiences showcased during the ATEE Spring Conference 2024, held at the University of Bergamo from May 29 to June 1, 2024. The volume presents 70 selected papers out of more than 300 presented by researchers representing over 40 countries.

This broad spectrum of studies highlights promising directions that can inspire renewed inquiry and concrete proposals aimed at improving contemporary educational systems.

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Teacher education research in Europe: trends, challenges, practices and perspectives

May 29th - June 1st, 2024
S. Agostino, Bergamo



Edited by Nicole Bianquin and Francesco Magni





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BOOK OF PROCEEDINGS

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Differentiation in Preschool. Pedagogical Issues and Best Practices

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Abstract

The study aims to intersect the most current ideas of work on 0-6 with the methodological perspective of Differentiation. Beginning with the input offered by Differentiated Instruction, teachers design activities to identify and foster an increasingly in-depth knowledge of children's interests, learning profiles and degrees of readiness, thus fostering everyone's participation and active involvement in processes of acquiring learning modalities that are then useful for the transition to primary school. The practices activated allow teachers to become researchers not only of practices, but above all of thoughts and working hypotheses, able to focus increasingly on the needs of individuals, and to pay attention to the instances and dynamics of the class group, favoring truly inclusive educational and didactic paths. This paper aims to offer a reflection on the opportunities offered by differentiation as early as kindergarten, preparing avenues of thought and action capable of linking legislative instances, pedagogical perspectives and teaching practice.

Keywords: 0-6 services; inclusion; differentiated Instruction; good practices.

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¹ Paragraphs n. 1-2

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1. The interest in early childhood

The last 20-30 years have seen a revitalized interest in early childhood issues in various scientific fields. From psychology to sociology, from medicine to neuroscience, from legislation to pedagogy, many fields of knowledge have carried out studies on the 0-6 world. The reasons behind this trend can be traced back to a few aspects, which we will try to summarize below.

The first concerns the recovery of studies and approaches from the past, which have been brought up to date and have found fertile ground for reflection and educational practice in today's early childhood services. This actualization has allowed us to refocus the pedagogical pillars of these models and to rediscover their potential that is still relevant and tuned with today's times. For instance, we can cite the development, both nationally and internationally, of numerous services that are inspired by the Montessori model and take up its 'Method' or Steiner's Waldorf pedagogy, or the numerous experiments with "open-air kindergartens" in northern Europe, which, started in the 1950s, have today become consolidated realities in many countries around the world.

What unites these models, although distant from each other in their theoretical thinking and in the way the underlying ideas are put into practice, is the centrality of the context, which becomes an active element in the learning process. It contributes, together with the educational proposal, to fostering children's development, independence and autonomy, offering stimuli capable of promoting their activism and protagonism. Today's childcare services are particularly attentive to this element, with designs for increasingly 'child-friendly' environments that can nurture and support an exploratory spirit in learning about the world and develop skills useful for tackling subsequent levels of education and, more generally, life with greater confidence and mastery. In the wake of the outdoor school models of northern Europe, outdoor space has also acquired a strong educational value in the design of 0-6 services, since it can multiply educational and didactic opportunities, totally (Scuole nel bosco or Agrinidi, for example) or partially replacing indoor environments.

The most current research directions on the choice of materials used to foster learning move in the same direction (: alongside objects specifically designed for teaching purposes, defined as 'structured materials' (interlocking games, wooden blocks, etc.) (Guerra, 2017), everyday objects, not conventionally designed for schooling, are also used in preschools today. These elements are unstructured and multifaceted in form and use, which can help children in the processes of discovery and research, encouraging problem solving, problem finding, divergent thinking and creativity (Guerra, 2019). In this case, the anchorage to the past is more current and goes back to the studies of the English architect Simon Nicholson who, at the beginning of the 1970s, began to use different materials, easily found in nature and in everyday use, for the design of kindergartens. This practice then took on the guise of a true theory, called the 'Loose Parts Theory', which is widely used today in early childhood projects (Folci, 2024).

The second element motivating the renewed focus on the 0-6 world can be attributed to the numerous discoveries about the functioning and evolution of children's brains and the valuable role that early life experiences play for the subsequent developmental stages (Shonkoff J.P., 2009). Neuroscience has provided a strong impetus to view early childhood as a fundamental time of growth, maturation and preparation for the future. Discoveries such as cell budding, pruning, the so-called 'critical periods', the close correlation between the genetic code and early experiences that then determine brain functioning, are just some of the contributions that support pedagogical reflection and the related teaching practice in the 0-6 services (Maggiolini, in D'Alonzo, Loner Zecchel, 2015). These elements constantly urge educators and teachers to consider the fundamental importance of early childhood education, recognizing the need for early educational intervention, in the prevention of dysfunctional behaviors and the promotion of adaptive and functional ones.

The third aspect that has impacted profoundly on the revision of 0-6 services is political and cultural: national and international policies aimed at the prevention of so-called 'educational poverty' have insisted, and continue to do so, on the need to ensure that all children have access to different levels of education, starting from childhood. The 2015 "*Sustainable Development Goals of 2030 Agenda of the United Nations Organization*" expresses it as follows: "*By 2030, ensure that all girls and boys have access to quality early childhood development, necessary care and pre-schooling so that they are*

ready for primary education". The fundamental role of 0-6 education in preventing and combating educational poverty is clear. The 0-6 centres do not only provide a service of a caring nature, but become true educational complexes, capable of forming future citizens and avoiding or, at least, limiting the damage caused by socio-economic deprivation.

2. Current legislation in support of 0-6

On a national level, the above-mentioned aspects, together with the contamination coming from the European educational guidelines, have also nourished a new normative reflection on pre-school services. Reference to a selection of ministerial documents will help us to capture fundamental elements in the definition of the new pedagogical Italian culture for childhood, which in recent years has been directing the projects dedicated to it.

The first text is the *"Indicazioni Nazionali per il curricolo per la scuola dell'infanzia e del primo ciclo di istruzione"* of 2012, expanded in 2018 (MIUR, 2012; MIUR, 2018). The title already suggests a new idea of educational proposal, which is intended to embrace 10 years of each student's school life, from the beginning of kindergarten to the end of secondary school, in the first cycle of education. On an operational level, this has entailed a renewed approach to teaching and educational planning for schools, with a substantial revision of subject planning and, above all, of the learning objectives related to it, which are declined into competences to be matured at the end of each grade. For the pre-school, knowledge is subdivided into 'experience fields', real domains that aim at the holistic education of the child, promoting the development of all skills and competences, in a heuristic learning process, based on doing and the reflection that can result from it.

The second document we would like to recall here is *"Linee pedagogiche per il Sistema integrato 0-6"* of 2017, which proposes a unified vision of an educational pathway that historically and traditionally was divided into two segments, the 0-3, which included the early childhood education services, and the 3-6, which corresponded to the pre-school.

This document, which has no statutory value, is part of the current legislation, which is characterized by the coexistence of state, regional and local responsibilities, and promotes stimuli for the promotion of an idea of integrated services, which can follow the life of the child from birth until entry into primary school, from 0 to 6 years of age. The continuity of the experience proposed in the 0-6 pathway requires an integrated planning of the various services and a unitary territorial pedagogical coordination, which can promote guidelines aimed at the harmony and convergence of the two educational sectors, 0-3 and 3-6. This action is carried out by the *"poli per l'infanzia"*, real educational centres within which educational services and infant-toddler schools coexist, thus contributing to fortifying a unitary identity of the 0-6. In these centres, a flexible planning of the educational offer can be realized, responding to the needs of the users and a better use of material, human and financial resources.

The latest document is *"Orientamenti nazionali per i servizi educativi per l'infanzia"* of 2022, a text that originated in the work of the ministerial commission that drafted the Pedagogical Guidelines of the integrated 0-6 system. In it, the specific characteristics of the 0-3 educational pathway are recalled and outlined, emphasizing certain elements that make it unique. During the first thousand days of life, children 'acquire a sense of their own identity, they learn to communicate with others by sharing meanings; it is in these thousand days that they learn to learn' (Commissione Nazionale per il sistema integrato di educazione e di istruzione, 2022, p. 5). In this florid period, educational intervention is characterized by a particular commitment to amalgamating the function of care with support for children's developmental potential, in responding to their needs while promoting their sociability and interest in learning. It is therefore necessary for the educational personnel working in early childhood services to be ready to grasp these peculiarities and to respond appropriately and competently, aware of their role: *"Self-control, patience, listening, sincere interest in each child, authenticity of relationships that translate into looks, gestures, verbal and non-verbal communication, differentiated and personalized interventions to include everyone are based on awareness of one's values, attitudes and emotions supported by specific professional tools"* (p. 28).

In the three documents certain elements appear recurrently that underline the general model that 0-6 services are acquiring in Italy. For the purposes of our discussion, it is fundamental to recall the theme of inclusion: all the texts mentioned, in fact, give great importance to this aspect, to the possibility of guaranteeing not only educational pathways for all from birth on, but that these are characterized by high quality. In 0-6 education, each child must feel that his or her uniqueness and originality is valued, with great attention paid to respecting personal times and individual functioning, with responses that must be calibrated to the real capacities and potential of the single child (Maggiolini, Amatori, 2021). Inclusion, therefore, is not something taken for granted, but the result of intentional daily work of construction and revision. This takes concrete form with the preparation of educational and didactic plans that are attentive to the characteristics of everyone, within which the individualization of paths represents an opportunity to enhance each child.

3. Differentiated Instruction: theory and practice

3.1 The theory

One approach to teaching and learning that aligns with this perspective is Differentiated Instruction, which originated in Virginia, USA, through the significant research and numerous school-based experiments conducted by Carol Ann Tomlinson (Tomlinson, 1999).

The fundamental observation is that children enter our classrooms with unique differences, both as individuals and as learners. Differentiated Instruction is a teaching approach that adapts instruction to meet students' diverse learning needs. This approach goes beyond merely «tailoring the same suit of clothes» (Tomlinson, 2017, p.4). Pupils are individuals with unique characteristics, requiring teachers to recognize and value them through an educational approach that avoids standardization and purely transmissive methods. Instead, it embraces the art of tailoring instruction, like sewing made-to-measure clothes.

The aim is not to propose a single approach to performing a task or activity, as this would ignore the unique characteristics of individual pupils. Teachers must maintain a clear educational and pedagogical perspective that all pupils are capable of learning.

Recognizing that learners have diverse needs, teachers plan lessons that offer multiple ways to “get at” and express learning. For this reason, it is essential to emphasize the interaction between the individual, the teacher, and peers within a “learner-centered” vision (Sousa, Tomlinson, 2018, p.36) focused on the pupil and their unique traits, starting from the very setup of the learning environment. It is a framework for thinking about and planning for student differences– a way of “being” in the classroom.

According to Tomlinson (Tomlinson,1999), there are three domains where teachers can diversify:

Content: that is the input, that which a pupil needs to learn

Process: in other words, activities that support learners in making sense of their learning.

Product: meaning ways for students to “show what they know”

More specifically, differentiating by content means changing the subject matter, i.e. the input provided to the class, based on student's readiness, interests and/or learning profiles. Differentiating by process, on the other hand, implies offering learners the opportunity to learn through pathways characterized by the presence of diversified inputs, actions and learning experiences.

Differentiation of the product, finally, is realized when the pupils have the opportunity of choosing how to demonstrate the knowledge, skills, and competences they have acquired through the learning process. In other words, the product represents the outcome of the process.

It should be made clear that the three differentiation criteria just mentioned do not represent exclusive options. Within a single teaching proposal, it is possible to differentiate simultaneously the process and the product, depending on the teacher's planning.

Teachers plan and implements different approaches to content, process and product in anticipation of and response to learner differences in readiness (a student's current proximity to specified knowledge, understanding, and skills), interest – what engages a pupil's attention and involvement – and learning profile, a preference for taking in, exploring, or expressing content, such as learning

styles and intelligence preferences. This is because everyone thinks, learns, and creates in different ways (D'Alonzo, Sala, 2023).

This can be done through a variety of strategies and by creating flexible groups that change regularly, depending on the teacher's plan.

The strategies for achieving this goal are potentially limitless. Since differentiation can be compared to a mental habitus, it is important for the teacher have a clear understanding of the characteristics of the pupils that needs to know in order to differentiate the educational proposal. The strategies used will depend more on the teacher's creativity and resourcefulness than on a predefined set of methods (Monauni, In D'Alonzo, Giaconi, 2024).

An important part of differentiated instruction is the pre-assessment: the goal of pre-assessment is to identify a student's knowledge, understanding and skills prior to the unit of study (their readiness) or to identify their learning profile or interests (Tomlinson, Imbeau, 2014).

Once this information is gathered, the teacher applies a strategy to differentiate the content, process and/or product.

In this regard, it is essential to emphasize that the learner's commitment to learning does not arise spontaneously. Instead, it must be continuously stimulated by the teacher, for example, by creating personal links with the content learned, finding engaging ways of presenting it and, above all, encouraging the learner to understand the meaning of what they are studying (Dack, Tomlinson, 2014).

There is a strong interdependence between the learning profile, pupils' interests, readiness, and pre-assessment, as they represent interrelated sources of knowledge that influence each other through a dynamic, spiraling process. The information gathered in the pre-assessment phase is crucial because it allows the teacher to design the teaching activity that align with the pupils' readiness, interests, while also enriching their learning profiles with new information. This helps to better define the path to be proposed in a recursive perspective (D'Alonzo, Sala, 2023).

3.2 The practice

In this context, the CeDisMa research group has developed vademecums on differentiated instruction, subdivided by school level, which are usually proposed in training courses. These guides include observation and planning tools designed to assist and support teachers who wish to implement this pedagogical approach in their daily practice.

Following this approach, CeDisMa has started a path to implement the differentiation in schools of all levels to find, train and motivate those teachers who are flexible and open to change and willing to experiment with differentiated teaching.

The CeDisMa group organized courses in many Italian schools where; after sharing the principles of differentiation with teachers, it guided them towards the horizon of differentiation.

CeDisMa specifically asked the schools involved in various research projects to experiment with tools designed to support differentiation, including:

- an observation sheet;
- a planning sheet;
- an assessment sheet.

More specifically, the observation tool consists of several interconnected sections. The first section helps teachers identify not only areas of weakness but, more importantly, strengths, opportunities, and challenges within the classroom context. This process enhances teachers' ability to plan effectively by increasing their awareness of potential barriers and facilitators that may impact differentiated activities.

The second sheet focuses on structuring the educational pathway according to the principles of Differentiated Instruction. It serves as an "Operational Plan" that outlines the methodological and strategic framework, defining key steps, describing the proposed activities, identifying differentiation criteria, specifying what aspects will be adapted, selecting the teaching strategies to be implemented, and establishing the timeline for each methodological phase.

The final sheet is dedicated to evaluating the activity, with the primary goal of encouraging students to engage in self-assessment.

An example from one of these training courses on differentiation might be the following: during the pre-assessment phase, teachers use colored balloons, each containing a picture representing an activity. Children then select the balloon corresponding to their preferences: the activity they like the most (No. 1), the one they like a little less (No. 2), the one they like even less (No. 3), and the one they don't like at all (No. 4). The teacher records these preferences in a table, making it possible to form groups based on learning preferences (using choices No. 1 and No. 2).

Following this, the children are grouped according to their choices. The strategy employed is known as Interest Centers (D'Alonzo, 2016): as the name indicates, this method involves organizing different areas in the classroom, each aimed at promoting meaningful learning by catering to students' specific interests while also helping them explore and develop new ones.

In the various centers, the teacher ensures that the learning activities are accessible to all students in different ways. This strategy allows children to be grouped based on their choices. Each center is identified by the color of the corresponding balloon, helping even the youngest children navigate the space and move independently.

In this example, the theme of the activity was the Earth. Consequently, the teacher's planning involved setting up different Interest Centers where various aspects of the Earth were explored in different ways: one, handling soil to experience its texture and characteristics; two, choosing a piece of wood and drawing something inspired by their creativity; three, listening to a story about the Earth, pre-recorded by the teacher and four dramatizing the story as it was read aloud by the teacher at the time.

At the end, the teacher asked each group to reflect on the activity and jump into the circle corresponding to a traffic light: green if they liked it, red if they encountered difficulties, and yellow if they needed more time to think about it. In a separate, dedicated moment, each child explained their choice, fostering self-reflection, self-awareness, and metacognition in all participants.

Of course, this is based on what the teacher observed during the activity. Similar to the workings of a gear, the recursive connection between pre-assessment, strategy proposal, and self-reflection on one's own learning process is evident, as these are three fundamental moments in the didactic-educational process.

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