

Articles

Continuing training for early childhood education teachers: proposal based on creative eco-training projects

Formação continuada de professoras da Educação Infantil: proposta embasada em projetos criativos ecoformadores

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Abstract

This article investigates how to implement contemporary educational approaches to enhance the pedagogical practices of early childhood educators, based on the principles of transdisciplinarity, eco-formation, and creativity. The descriptive qualitative research was conducted with teachers of children aged 0 to 3 years, using semi-structured questionnaires to explore their perceptions of continuing teacher education and innovative methodologies. The results indicated a strong need for training on inclusion and the use of project-based methodologies, as well as a demand for practices more aligned with the realities of the children. The article proposes a training course based on the methodology of Creative Eco-formation Projects, aiming to transform teaching practices with an integrated and contextualized approach. The final considerations highlight the importance of fostering ongoing dialogue between theory and practice and suggest adopting flexible training adapted to the needs of educators.

Keywords: continuing teacher training; early childhood education; transdisciplinarity; eco-formation; eco-formative creative projects

Resumo

A formação continuada de professores da Educação Infantil desempenha um papel essencial na qualificação das práticas pedagógicas e no aprimoramento do ensino. Este estudo objetiva propor um curso de formação continuada fundamentado nos princípios da transdisciplinaridade, ecoformação e criatividade, utilizando a metodologia dos projetos criativos ecoformadores. A pesquisa caracterizou-se como descritiva e qualitativa e os dados foram coletados por meio de um questionário on-line semiestruturado, aplicado a 18 professoras da rede municipal de União da Vitória – PR. A análise de conteúdo revelou uma necessidade de formação voltada à inclusão escolar, a metodologias inovadoras e ao uso de tecnologias digitais. Como resultado, elaborou-se um curso híbrido de 64 horas, articulando teoria e prática para atender às demandas docentes. O estudo reforça a importância de uma formação continuada inovadora, promovendo práticas reflexivas e contextualizadas para a Educação Infantil.

Palavras-chave: formação continuada; Educação Infantil; transdisciplinaridade; ecoformação; projetos criativos ecoformadores..

INTRODUCTION

Early Childhood Education is a right guaranteed by the 1988 Federal Constitution of Brazil, which, in Article 227, establishes the right to education, health, nutrition, and protection during childhood. Article 205 emphasizes the full development of the student as a person, thereby including infants and young children within its scope. Furthermore, Article 208, section IV, mandates the provision of “[...] early childhood education, in daycare and preschool settings,

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Study conducted at Early Childhood Education Center (Núcleo de Educação Infantil – NEI), União da Vitória, PR, Brasil.



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for children up to five (5) years of age" (Brasil, 1988). These provisions constitute public policies aimed at ensuring the effectiveness of education by providing age-appropriate environments and curricula, as well as qualified teachers to support the teaching and learning processes of infants and young children (Pereira, 2021).

In order for these rights to be effectively upheld, it is essential that educational practices be planned, reflective, and grounded in both guidelines and research on childhood. These practices must materialize in values, behaviors, knowledge, and affective experiences that enable the child to be recognized as a citizen with full rights. Recognizing the child as an active subject in their own learning and developmental process necessitates the assurance of opportunities to "[...] test their imagination, their capacity to invent, to create original things, to face obstacles and difficulties" (La Torre; Zwierewicz, 2009, p. 157), thereby promoting their development.

The provision of educational environments that allow children to explore their imagination and overcome challenges contributes significantly to the development of both cognitive and socio-emotional skills. Additionally, La Torre and Zwierewicz (2022, p. 190) emphasize that "[...] the potential for resilience and creativity can transform a transgressor into a scientist," underscoring the importance of recognizing and fostering the intrinsic potential of children.

Teacher education plays a crucial role in improving the pedagogical practices offered by Early Childhood Education professionals to young children. As knowledge about the specific needs of this population deepens, the capacity to serve it effectively also expands. Teacher education, understood as a dynamic process, enables the construction of diverse knowledge and understandings through dialogue, experience-sharing, and critical and in-depth reflection on one's knowledge and its construction and application within the educational context (Leal, Amorim; Lopes, 2023). Therefore, it is essential that teacher education transcend fragmented and decontextualized pedagogical practices in which the teacher is limited to transmitting knowledge and the child merely performs tasks. It is necessary to "[...] seek processes that can support teachers in transforming pedagogical practice in order to meet the demands of the contemporary world" (Behrens; Prigol, 2023, p. 999). In this context, the Creative Eco-formative Project (PCE) emerges as a promising proposal for the enhancement of teachers' pedagogical practices, grounded in transdisciplinarity, creativity, and eco-formation.

Transdisciplinarity, according to Nicolescu (2002), goes beyond interdisciplinarity by integrating different fields of knowledge and overcoming disciplinary boundaries to address the complex challenges of contemporary education. Eco-formation, as proposed by Morin (2008), suggests an educational approach that articulates the human being with the environment in an integrated manner, promoting a systemic and responsible understanding of the relationship between the individual and the planet. Lastly, creativity, in the educational context, seeks to foster innovative processes that reframe teaching and learning, connecting students to both their local and global realities.

Considering the need to improve the pedagogical practices of teachers working in Early Childhood Education, the following research question emerged: how can contemporary educational methods, strategies, and approaches be implemented to support the professional development of Early Childhood Education teachers in enhancing their pedagogical practices? Accordingly, this article aims to present a proposal for a continuing education course for Early Childhood Education teachers, grounded in the principles of transdisciplinarity, eco-formation, and creativity, with the objective of qualifying the teachers at the school under study in the methodology of the PCE.

TEACHER EDUCATION FOR THE SENSITIZATION TO CREATIVE ECO-FORMATIVE PROJECT METHODOLOGY

The Creative Eco-formative Projects (PCE, in Portuguese) were developed in 2009 by Saturnino de La Torre, coordinator of the Research and Didactic Advisory Group (Grupo de Investigación y Asesoramiento Didáctico – GIAD) at the University of Barcelona (UB), Spain, and Marlene Zwierewicz, from the University of Alto Vale do Rio do Peixe (UNIARP), Brazil. The methodology

was first presented in the work *A School for the 21st Century: Creative Schools and Resilience in Education* (La Torre; Zwierewicz, 2009).

There are numerous possibilities for conducting outstanding work in Early Childhood Education, in which enchantment and creativity occupy a central role. The PCE (La Torre; Zwierewicz, 2009) skillfully encompasses these and various other essential characteristics. "The methodology does not differentiate itself specifically by its ability to stimulate creativity, dialogue, collaboration, and the generation of new knowledge, for these have already been proposed by other types of projects"; its uniqueness lies "[...] in the potential it offers to teach from life, addressing it with solutions projected within the context of application, through situations and resources that go beyond the mere reproduction of scientific knowledge" (La Torre; Zwierewicz, 2009, p. 51).

The PCE promotes practices that go beyond encouraging inventiveness, fostering interaction, stimulating cooperation, and facilitating knowledge creation. It integrates the context and lived reality into teaching and learning processes with the aim of overcoming the "banking" model of education (Freire, 2002) and reductionist approaches (Morin, 2008). A teaching methodology grounded in children's experiences and interests, and connected to their reality, enables them to face challenges in a meaningful way, creating from their own life experiences. Thus, the PCE proposes a convergence between curriculum and reality, integrating theory and practice through a methodology rooted in transdisciplinarity, eco-formation, and creativity. This approach stands in contrast to traditional education, positioning the student as an active participant in the construction of meaningful and relevant knowledge (La Torre; Zwierewicz, 2009).

Various concepts encompassed by the principles of the PCE can be aligned with the *Diretrizes Curriculares Nacionais da Educação Infantil* (National Curriculum Guidelines for Early Childhood Education – DCNEI). Article 9, item VII, proposes the development of "[...] ethical and aesthetic experiences with other children and cultural groups, which broaden their frames of reference and identities through dialogue and recognition of diversity" (Brasil, 2010). Item VIII emphasizes the encouragement of "[...] curiosity, exploration, wonder, questioning, inquiry, and children's knowledge in relation to the physical and social world, time, and nature" (Brasil, 2010). Lastly, item X calls for the promotion of "[...] interaction, care, preservation, and knowledge of biodiversity and the sustainability of life on Earth, as well as the avoidance of wasting natural resources" (Brasil, 2010).

Another official document that aligns with the PCE is the *Base Nacional Comum Curricular* (National Common Core Curriculum – BNCC), which establishes interactions and play as structural axes of pedagogical practices. This document emphasizes the importance of attributing educational intentionality to pedagogical practices, recognizing that children need to interact and experience daily practices through play, imagination, fantasy, observation, experimentation, and curiosity. Accordingly, the educational environment must provide experiences that allow children to face challenges and develop problem-solving skills in order to build meaningful knowledge (Brasil, 2018).

A teaching proposal anchored in the experiences, aspirations, and interests of children significantly enriches the educational process, bringing the practices developed in Early Childhood Education institutions closer to children's realities. This approach allows them to consider surrounding challenges in a meaningful way, from creative perspectives grounded in their own lived experiences. For example, instead of addressing *Tree Day* through traditional activities such as coloring a stylized tree with a brown trunk and green leaves, the PCE proposes a more experiential approach. In addition to discussing trees, children—together with the teacher and peers—explore the reality of the trees in their immediate environment, which often do not correspond to the idealized images found in textbooks, but rather reflect those that are part of their community and surroundings. The sensory experience of touch, smell, and the various textures of these plants creates lasting memories for the children. Furthermore, the emphasis of the PCE on solidarity and sustainability contributes to the formation of solutions that promote environmental care, simultaneously valuing personal, social, and ecological responsibility.

The pedagogical methodology of the Creative Eco-formative Projects (PCE) is grounded in theoretical assumptions that include transdisciplinarity, eco-formation, and creativity. This approach is therefore based on principles that contrast with the traditional linear model of education, in which the teacher is the central figure and learners are viewed as mere passive recipients of knowledge. Grounded in the principles of transdisciplinarity, early childhood educators are encouraged to understand that the development of young children requires a pedagogical approach that considers the construction of knowledge through modes of thinking that do not rely on absolute certainties (Morin, 2001). This perspective fosters the creation of understandings, promotes the connection between different domains of knowledge, and allows for the exploration of what lies beyond the already known (Prigol; Behrens, 2018).

Pedagogical practice, in light of a transdisciplinary and complex mode of thought, “[...] does not deny the importance, usefulness, or meaning of disciplinary, multidisciplinary, or even interdisciplinary knowledge; on the contrary, it acknowledges its value, utility, and relevance” (Moraes; Navas, 2015, p. 127). Within this context, the pedagogical approach aims to create opportunities that stimulate questioning, doubt, inquiry, curiosity, active participation, dialogue, and problem-solving. Such conditions foster children’s critical and creative thinking and contribute to the development of their autonomy, reflective capacity, and creativity (Prigol; Behrens, 2020).

In order to stimulate creativity in children, it is essential that teachers develop didactic practices that are both creative and flexible—capable of generating “[...] happiness, as they promote self-regulation of consciousness, in that all experiences, such as pain or joy, boredom or interest, are incorporated into the mind as information” (Berg, 2021, pp. 105–106). Creativity, as approached by various authors (Csikszentmihalyi, 2014), is a widely discussed topic, characterized by a diversity of concepts and principles that converge, diverge, and complement one another. Within the educational context, it plays a crucial role in child development. La Torre (2005, p. 113) states that “[...] creative thinking is a type of mental energy that can be increased, inhibited, or specialized [...] through human stimuli and eidetic images.” This perspective can sensitize educators to envision more engaging, creative, and rewarding learning environments in which children are more focused, experience greater control over their learning processes, and derive greater enjoyment from them.

Eco-formation constitutes another core concept of the PCE. According to Pineau (2008), it contributes to the development of an education that occurs for and in conjunction with the environment, promoting the individual’s awareness of their relationship with nature, society, humanity, and ethics. This view aligns with Morin’s (2001) notion of “teaching terrestrial identity,” which encourages the subject to recognize themselves as an integral part of planet Earth, thereby overcoming a fragmented and reductive worldview that impedes understanding of both the parts and the whole (Morin, 2008).

Galvani (2002) expands upon this idea by suggesting that eco-formation transcends traditional environmental education, as it acknowledges that the ways in which human beings live, adapt, develop, and relate are deeply connected to nature and the environment. This process is influenced by factors such as social interactions, climate, and physical space, operating through a recursive dynamic (Morin, 2008) that affects society, nature, and culture.

For La Torre and Zwierewicz (2009, p. 195), “[...] the eco-formative perspective is grounded in the development of consciousness, in the connection between human beings and nature and society, in complex thinking, sustainability, and a stronger emphasis on human values.” This outlook highlights the role of education, critical reflection, and civic development in promoting effective eco-formation and in building a society that is more harmonious with the environment. Zwierewicz and La Torre (2009) further affirm that the educational process must develop individuals not only through theoretical knowledge but also through practical skills and applied understanding, contributing to their personal and social growth.

Thus, the PCE is not merely a pedagogical project; rather, it constitutes a methodology that fosters the meaningful and comprehensive integration of content, structured around four key principles: (i) it offers a teaching and learning framework grounded in autonomy, transformation, collaboration, and holistic development; (ii) it starts from the students’ interests and their lived reality, transcending purely scientific knowledge; (iii) it encourages a flexible

and responsive educational practice that remains open to prior and emergent dynamics during implementation;(iv) it promotes resilience among both students and teachers, who re-signify their thinking while collaboratively transforming their surroundings (La Torre; Zwierewicz, 2009).

To facilitate understanding of the implementation of a Creative Eco-formative Project (PCE), several stages have been outlined, which incorporate the theoretical principles of creativity, transdisciplinarity, and eco-formation. These stages do not follow a linear sequence; instead, they are complex and interconnected, forming a continuous cycle—as though the project is always in progress, without a clearly defined endpoint. These stages serve as conceptual organizers of the PCE and, according to La Torre and Zwierewicz (2009), function as a map for a journey toward the desired objectives. However, there are no predetermined paths, since the starting point is uncertainty, and the objectives become clearer as the process unfolds.

The choice of conceptual organizers stems from the reflections of the authors who, in developing the PCE, advocated the notion that a creative school must begin with the realities present in each educational setting, while also going beyond its point of departure. It should foster competencies, attitudes, and values that prepare individuals both from life and for life, drawing upon real-world problems that prioritize the development of a consciousness oriented toward personal, social, and planetary harmony (Zwierewicz, 2013, p. 102).

For teachers to implement a pedagogical practice grounded in the methodology of the Creative Eco-formative Projects (PCE), it is essential that they develop a deep understanding of its meaning. Such comprehension enables the transposition of the conceptual organizers (Figure 1) not as a mere set of instructions to be followed, but rather as flexible elements that respond to specific teaching needs and contexts.

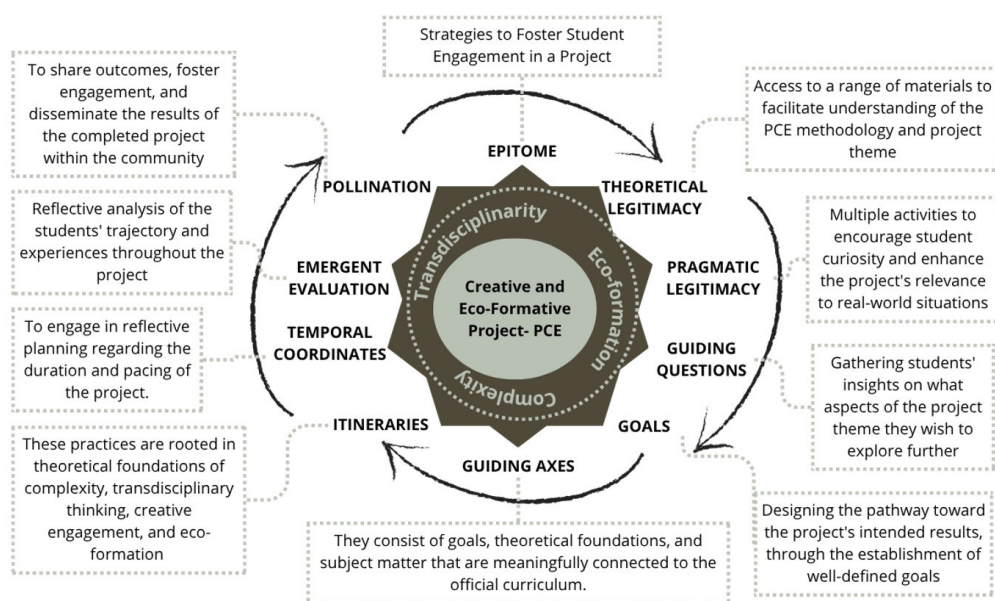


Figure 1. PCE Structure.
Source: Zwierewicz and La Torre (2009).

Continuing education for early childhood education teachers is a key pathway to broadening didactic understanding of the learning process and the specific needs of child development, taking into account the context in which the child is situated and the demands of the contemporary world. To ensure the effective implementation of the Brazilian National Education Guidelines and Framework Law (Lei de Diretrizes e Bases da Educação Nacional – LDB), it is essential that teachers possess a solid knowledge base regarding child development, early childhood, and the construction of learning, among other indispensable aspects. As

emphasized by Lordani, Cruz and Araújo (2022, p. 664), “[...] considering the purpose of this educational stage, [...] it is essential that educational work and pedagogical practices be directed toward ensuring that children’s learning is effective and, thus, contributes to their holistic development.” In this context, continuing education emerges as an ally to high-quality pedagogical practice, offering teachers the opportunity to reflect on their methods, revisit foundational concepts, and share experiences with other professionals.

METHODOLOGICAL APPROACH

This study is characterized as a descriptive research project with a qualitative approach, grounded in the need to understand meanings and human interactions within the educational context. According to Gerhard and Silveira (2009), a qualitative approach seeks to construct data through the analysis of participants’ experiences and perceptions, allowing for a deeper understanding of the investigated characteristics.

With regard to descriptive research, Triviños (2011) states that its main objective is to observe, record, analyze, and describe specific aspects of scientific reality, without necessarily aiming to explain causal relationships or formulate theories. Thus, this study aims to propose a continuing education course for early childhood education teachers, anchored in the principles of transdisciplinarity, eco-formation, and creativity, by qualifying teachers from the researched institution through the PCE methodology.

For data collection, a semi-structured online questionnaire was developed, enabling the collection of detailed information regarding teachers’ perceptions of their pedagogical practices and training needs. This instrument encompassed three core dimensions: (i) teaching professionalism, including academic background and experience in basic education; (ii) training needs, related to gaps in the teaching and learning process; (iii) innovative knowledge, considering the adoption of contemporary practices in early childhood education.

Its structure allowed for an in-depth analysis of the teachers’ perceptions and experiences, making it possible to identify relevant areas for improvement and potential interventions to strengthen pedagogical practice.

For data analysis, content analysis was employed, as proposed by Bardin (2011), following three methodological stages: (i) pre-analysis, involving the organization and selection of material based on the research locus; (ii) material exploration, in which questionnaire responses were examined and categorized according to the study’s objectives; (iii) treatment of results, allowing for pertinent inferences and interpretations.

This methodological procedure was chosen due to its capacity to structure, categorize, and interpret participants’ discourse, thereby providing a foundation for the development of the continuing education course.

The empirical field of the research corresponded to the Núcleo de Educação Infantil (NEI – Early Childhood Education Center) of the municipal education network of União da Vitória, Paraná, a public institution serving children aged 0 to 3 in daycare settings, in accordance with current regulatory documents. The research sample consisted of 18 early childhood education teachers working at the institution.

The study was conducted in accordance with ethical principles that ensure the protection of participants’ rights and well-being, as well as the integrity of the research process. In line with the principles outlined by Freire (2002), the importance of respecting teachers’ perspectives is emphasized, ensuring an active listening process and the appreciation of their experiences.

Moreover, the research aligns with the reflections of Morin (2001), who underscores the significance of ethics in knowledge production, considering respect for human rights and the diversity of thought. Accordingly, the ethical principles of this investigation were based on four essential guidelines: (i) obtaining informed consent from all participants; (ii) guaranteeing confidentiality and anonymity of the collected data; (iii) protecting the identity of the teachers, avoiding any form of undue exposure; (iv) ensuring non-discrimination in the participant selection process, thus promoting equity and respect for diversity.

This methodological structure enabled an investigation into the demands and challenges faced by early childhood education teachers, providing the necessary tools for the design of a continuing education course aligned with the actual needs of the educational context.

RESULTS AND ANALYSES

The “*teaching professionalism*” dimension of the applied questionnaire was organized into six questions related to: teacher education, professional experience within the context of basic education, participation in in-service training programs, and the pursuit of continuing education and self-directed learning opportunities. These elements aimed to gather relevant perceptions regarding the educational and professional backgrounds of the teachers—information deemed fundamental to support the planning of the continuing education proposal, with the goal of improving pedagogical practice and strengthening teacher development in early childhood education.

Regarding the educational background of the 18 research participants, 12 teachers had completed a high school-level teacher training program (*Magistério*), and an equal number (12) had earned a degree in Pedagogy. Additionally, six teachers held degrees in other undergraduate programs. Concerning *lato sensu* postgraduate education, 17 of the respondents held a specialization in education, while only one had specialized in school management. As for *stricto sensu* training, three participants had obtained a master’s degree in Education.

The data reveal a teaching profile largely oriented toward pedagogical training, reflecting a continuous effort toward qualification, particularly in terms of specialization in the field of education. However, the relatively low number of teachers with a master’s degree may indicate ongoing challenges in the field of educational research. *Stricto sensu* education plays a fundamental role in consolidating the figure of the teacher-researcher, enabling the production of knowledge and the application of new methodological and didactic approaches in the school context. Therefore, expanding access to graduate programs not only promotes the professional development of teachers but also significantly contributes to innovation in pedagogical practice and the improvement of educational quality.

The second question in this dimension addressed the participants’ length of experience in basic education. Half of the respondents had between five and ten years of experience, while 30% reported more than ten years in the field, indicating a significant presence of professionals with an extended career trajectory. Only 11% reported over 20 years of experience. These findings indicate that the majority of teachers have relevant professional experience, which can positively influence the quality of pedagogical practices and decision-making within schools. They also highlight the importance of valuing the expertise of more experienced professionals while providing support to those at the beginning of their careers in basic education.

The third question examined the teachers’ participation in in-service continuing education programs in the years 2022 and 2024. The results showed that all participants had attended such courses, which is essential for improving pedagogical work and aligns with the legal requirement to provide professional development opportunities to educators, as stated in Article 5 of Law No. 14.817/2024. Regarding the applicability of the training to pedagogical practice, 39% of the respondents reported making full use of what they learned, while 33% reported partial application.

The fourth question allowed for open comments about the in-service training. Five teachers chose not to provide comments. Three praised the quality of the training and expressed satisfaction with their participation, while four reported that the training was insufficient and repetitive, suggesting a need for more dynamic content aligned with real classroom contexts. Another six participants offered varied comments, including positive assessments, limited participation, and critiques about the repetition of topics. These responses indicate overall satisfactory engagement with the training; however, they also reveal signs of insecurity and dissatisfaction among some respondents.

The fifth question investigated the teachers’ engagement in self-directed professional development, focusing on individual initiatives to acquire knowledge and improve pedagogical

practices. Among the participants, 67% reported having taken a course, while 33% stated that they had not. Regarding the methodologies used in these courses, 40% rated them as excellent, while 60% considered them adequate; no respondents rated them as poor. As for the content covered, 56% considered it excellent and 44% adequate, with no reports of unsatisfactory content. Regarding the applicability of the knowledge acquired to pedagogical practice, 50% stated it was partially applicable, 42% fully applicable, and only 8% reported it was not applicable. These results highlight the importance of self-directed learning in teachers' professional development and classroom practice.

Self-education, whereby the teacher actively seeks to improve, is as vital as institutional training, contributing to the construction of professional identity and the transformation of pedagogical practice. This question enabled a shift toward the analysis of more personal dimensions, which are essential for the design of a relevant continuing education program.

In the "*training needs*" dimension of the questionnaire, three open-ended questions were proposed to identify the informational, content-based, practical, and knowledge-related demands necessary for improving pedagogical practices. This approach sought to better understand the specific needs and interests of early childhood education teachers, offering valuable insights for the planning of continuing education programs. The responses allowed for a detailed qualitative analysis of training needs and priority areas for intervention and professional support.

In the first question, teachers were asked about the knowledge they felt they needed to improve their pedagogical practices. Sixteen of the eighteen participants responded, demonstrating a high level of engagement. The responses were categorized into four distinct areas, with seven of them focused on *inclusion*, covering topics such as autism and special education. The analysis underscored a strong demand for knowledge in the area of inclusion, highlighting the need for teacher training that addresses both children's disabilities and human and subjective dimensions, particularly in early childhood education.

According to the *Diretrizes Curriculares Nacionais da Educação Infantil* (DCNEI), pedagogical practice in early childhood education should be enriched with goals that promote cognitive development, encourage observation, inquiry, and problem-solving in everyday situations. Moreover, it is essential to address children's affective, emotional, interpersonal, social, and cultural development. This requires teachers to possess broad theoretical and practical knowledge to create environments conducive to child development. Thus, teacher education should include both theoretical content and reflective practical experiences, preparing teachers to meet the complex needs of young children. This systemic approach is crucial to ensuring a stimulating and meaningful learning environment for children in their early educational experiences.

The "*experience*" category—highlighting the importance of creating spaces for dialogue and the exchange of experiences—was mentioned by four teachers as essential to continuing education, reinforcing the value of peer-sharing for professional growth. The "*theoretical foundation*" category was cited by one respondent, who emphasized the need to link theory and practice in in-service training, underlining the relevance of a solid theoretical basis to support pedagogical actions in schools.

The second question in this dimension explored teachers' interests and needs for improving their pedagogical practices, allowing them to identify topics or areas of interest for their professional development. This enabled the tailoring of the continuing education program to the participants' specific needs, promoting more relevant and effective learning. The responses were carefully analyzed and organized into two main categories: *inclusion* and *experiences*.

The *inclusion* category encompassed themes related to integrating children with special needs, creating inclusive environments, and working with autism. The *experiences* category highlighted pedagogical experiences, reflective accounts, and meaningful practices, identifying challenges and successful strategies. These categories provided deeper insight into the teachers' concerns and interests. Additionally, a third question revealed two further categories: *lack of time* and *lack of physical space*, indicating that these limitations may hinder the fulfillment of certain early childhood education demands, particularly when training does not align with the actual school context.

The final dimension of the questionnaire, focused on *innovative knowledge*, aimed to assess teachers' adoption of emerging practices. Three aspects were examined: (i) the use of project-based methodology; (ii) the integration of digital information and communication technologies; (iii) knowledge of the PCE and its applications in early childhood education.

This analysis revealed the level of familiarity among teachers with innovative practices, identifying knowledge gaps and professional development opportunities. These insights are essential for guiding future continuing education initiatives and for promoting pedagogical practices that are more aligned with the demands of contemporary education.

The first question investigated teachers' use of project-based methodology. Upon analyzing the responses, 55% of the participants did not answer the question, 28% reported having used the methodology and found it beneficial, and 17% stated they had never used it. This low engagement may indicate a lack of knowledge or familiarity with the approach. Among those who had used it, responses from participants P2, P3, and P7 described positive experiences, suggesting that project-based methodology can be an effective tool in early childhood education, encouraging deeper understanding through reflective inquiry.

The second question addressed the use of digital information and communication technologies in pedagogical practice. Only 17% of respondents reported using such technologies regularly, while 39% did not respond. An additional 6% indicated insufficient knowledge, and another 6% stated they were familiar with the technologies but did not use them. Furthermore, 17% used digital tools exclusively for documenting pedagogical work, without integrating them into the teaching and learning process.

The final question revealed that only 22% of teachers were familiar with the PCE, although a positive perception of the methodology was evident among those who were aware of it. This suggests that the PCE may already be present in pedagogical practices, even if not explicitly recognized by name. The responses reflected a positive attitude toward the PCE and a strong interest in deepening knowledge about it, which is relevant to this study's objective of expanding awareness of the PCE among educators, particularly in early childhood education. Continuing teacher education must be consistently updated to meet the specific needs of early childhood education, which require innovative knowledge and inclusive pedagogical practices. Likewise, the data collection emphasized the importance of addressing themes such as inclusive education and autism in training proposals, ensuring that all children are adequately welcomed and included in the educational process.

Teachers expressed positive expectations regarding the PCE, as illustrated by the following statement from one participant: "[...] I'm not exactly sure what it is, but from what I've heard, it's a project that transforms the institution" (P12). This statement reflects a desire for change in pedagogical practice and reinforces the interest in exploring how the PCE can contribute to such transformation—particularly through experience-sharing and community engagement.

The data collection process broadened the understanding of issues not initially anticipated, helping to refine the continuing education proposal and resulting in an educational product more closely aligned with the needs identified.

EDUCATIONAL PRODUCT¹: OUTCOME OF THE CONDUCTED RESEARCH

The administration of the questionnaire aimed to identify the actual needs of the teachers working at the investigated Early Childhood Education Center (*Núcleo de Educação Infantil – NEI*), thereby supporting the contextualization of the proposed training program (Chart 1). These data were essential for the design of a continuing education program targeted at teachers working with children aged 0 to 3 years. The program was structured based on the methodology of the Creative Eco-formative Projects (PCE), epistemologically grounded in the principles of transdisciplinarity, eco-formation, and creativity, promoting the contextualized integration of this methodology into pedagogical practice.

These guidelines and strategies served as the foundation for the development of a teacher training proposal, which was transformed into an educational product aimed at teacher

¹ Wolf, Prigol and Simão (2024).

Chart 1. Guiding ideas for the continuing teacher training course.

Theoretical Framework	<ul style="list-style-type: none"> - Promotion of dialogue and exchange of experiences among teachers: encourage communication and the sharing of pedagogical practices among educators, fostering the development of collective strategies and the continuous improvement of educational practice. - Valuing the manifestations of beliefs in early childhood education daily life: actively incorporate the beliefs and cultural expressions of children and their families into the school routine, recognizing and respecting cultural diversity as a fundamental element in the learning process. - Integration of play with the cultural context: develop playful activities aligned with the children's cultural context to strengthen cultural identity and the connection between school and community. - Interactions among children: facilitate and promote meaningful interactions among children, valuing collaborative learning and interpersonal relationships as central components of early childhood education. - Exploration of games and play activities: use games and play as pedagogical tools, exploring their potential for cognitive, emotional, and social development of children. - Organization of space and time: plan and organize the educational environment and time to maximize learning opportunities, ensuring that the physical space and time management are conducive to the needs and rhythms of children. - Development of problem-solving skills: encourage children's ability to identify, analyze, and solve problems, promoting critical thinking and autonomy.
Constructs from the DCNEI (Brasil, 2010) and BNCC (Brasil, 2018)	<ul style="list-style-type: none"> - Playful experimentation with diverse materials and engagement with literature and people: support the use of a wide variety of materials in experimental activities, integrating literature and interpersonal contact to enrich educational experiences. - Attention to bodily and emotional needs, communication, and safety: prioritize meeting children's physical and emotional needs, fostering strong emotional bonds, effective communication, and providing safe and enriching experiences that introduce children to the world. - Integration of experiences: incorporate practical and contextual experiences into the training process, valuing experiential learning as an essential element in continuing education.
Questionnaire: Training Needs of NEI Teachers	<ul style="list-style-type: none"> - Project-based methodology approach: implement project methodology as a pedagogical strategy, promoting the development of competencies through interdisciplinary and student-centered activities. - Promotion of inclusion in Early Childhood Education: develop inclusive practices that ensure the participation of all children, respecting diversity and guaranteeing equity in the educational environment. - Improvement of pedagogical practices: review and enhance adopted pedagogical practices, aiming for innovation and effectiveness in the teaching-learning process.

Source: Developed by the authors (2024).

capacity-building and the promotion of innovative and inclusive pedagogical practices in Early Childhood Education.

The course Building Knowledge: An Eco-formative Training Course for Early Childhood Education Teachers was offered in a hybrid format, integrating face-to-face meetings with distance learning activities, with the aim of providing flexible training adapted to the specific needs of teachers. The total workload was 64 hours, distributed over a period of three months, allowing for adequate immersion in the proposed content.

The in-person sessions were conducted in six meetings, each lasting 8 hours, totaling 48 hours of face-to-face activities. These moments were dedicated to theoretical presentations, content discussions, hands-on workshops, and the facilitation of experience-sharing among participants. To complement the training, participants completed 16 hours of asynchronous activities carried out in a virtual learning environment. These included readings, reflections,

project development, and other tasks that enabled participants to consolidate the knowledge acquired during in-person sessions and apply it in practical contexts.

The hybrid structure of the course aimed to balance the depth of in-person engagement with the flexibility of distance learning, thereby promoting a continuous training process aligned with contemporary demands in teacher education.

This course structure (Figure 2) highlights a continuous and integrative training process that aligns theory and practice through both in-person meetings and distance learning activities, offering Early Childhood Education teachers an eco-formative approach grounded in the principles of the Creative Eco-formative Projects (PCE). The modular organization enables in-depth reflection on core themes and practical application in real-life contexts, thereby promoting teacher development in a systemic and contextualized manner.

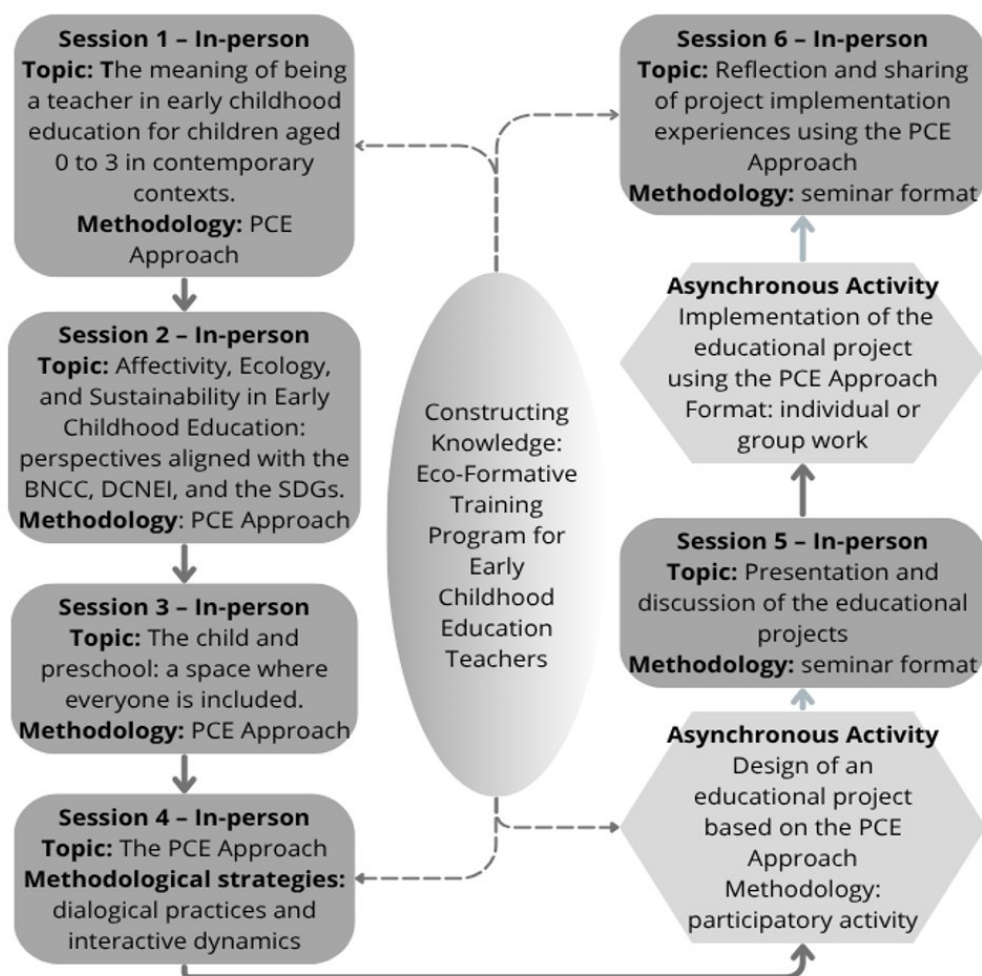


Figure 2. Teacher training course structure.

Source: Zwierewicz and La Torre (2009).

The course provides a transformative approach by encouraging teachers to critically reflect on their pedagogical practices and the challenges they face in their daily school environments. Through a methodology based on the creation and implementation of projects, it fosters constant interaction between theory and practice, allowing educators not only to discuss contemporary themes—such as sustainability and inclusion—but also to apply these discussions in real classroom settings. Furthermore, by sharing projects and their implementation during the training sessions, teachers are given the opportunity to exchange experiences, learn from each other's challenges, and develop a systemic perspective that encompasses the multiple dimensions of Early Childhood Education.

This exchange of experiences, combined with the integration of knowledge from different disciplines and cultures, broadens teachers’ understanding of the complexity of teaching and strengthens a more conscious, critical, and reflective pedagogical practice. In this sense, the course promotes an eco-formative perspective committed to transforming educational realities. Chart 2 presents the structure of the first training session.

Session 1 is closely connected to the principles of complexity, transdisciplinarity, and eco-formation, as it encourages deep reflection on the role of the teacher, addressing the multiple dimensions of pedagogical practice. The activities integrate different fields of knowledge, promoting a transdisciplinary approach by linking personal and professional life, while the fruit-based dynamics

Chart 2. Session 1 of the Teacher Education Proposal.

Theme	What does it mean to be a teacher in Early Childhood Education for children aged 0 to 3 in contemporary times?
Objectives	<p>To reflect on teaching practice in Early Childhood Education, considering the complexities of being a teacher in contemporary times.</p> <p>To promote the connection between personal and professional life through activities that stimulate creativity, eco-formation, and a transdisciplinary perspective on education.</p>
Synopsis	<p>1. Reflective Reading: Begin the session with the reading of an excerpt from the book <i>Dear World, How Are You?</i> by Toby Little. Each teacher will be invited to reflect on the excerpt and relate it to the role of the educator in contemporary times.</p> <p>2. Written and Artistic Reflective Activity: Teachers will write a personal reflection on how they feel about being a teacher in the present day. On the back of the page, they will draw a fruit that symbolically represents their feelings about teaching.</p> <p>3. Fruit-Based Dynamics: Use one basket with real fruit and another with cards displaying illustrations of various fruits. Each participant will choose their favorite fruit and the fruit they like the least, connecting their choices to perceptions about their educational practice.</p> <p>4. Sharing Circle: The written reflections and fruit preferences will serve as prompts for an open dialogue among teachers about the challenges and satisfactions they experience in their pedagogical practice.</p>
Theoretical Justification	Sonneville and Jesus (2009).
Pragmatic Justification	<p>Artistic Reflection Mural: Expressions of Practice</p> <p>This activity aims to promote immediate and practical reflection on the challenges and achievements of being a teacher in Early Childhood Education. It seeks to stimulate teachers’ creativity and self-expression through playful and reflective dynamics that foster a connection between personal and professional dimensions. Additionally, it integrates sustainable and ecological practices into teaching by encouraging reflection on the environment and educational responsibility.</p> <p>Activities: Teachers will be invited to express their reflections on the assigned reading by collaboratively creating a collective artwork that represents their thoughts, feelings, questions, and certainties. A large sheet of paper (approximately 1.5 x 4 meters) will be placed on the wall, where all participants can visually express their ideas using a variety of artistic materials such as paints, colored pencils, crayons, paper, natural elements (leaves, flowers, seeds, twigs, stones, etc.), and recyclable materials.</p> <p>They will be encouraged to reflect on the text and its relationship to their pedagogical practice in Early Childhood Education, expressing their interpretations and insights visually. At the end of the activity, teachers will have the opportunity to present and discuss how their contributions represent their reflections, fostering an exchange of ideas and experiences that promotes deeper reflection and dialogue on key issues related to teacher training and professional practice.</p>

Source: Developed by the authors (2024).

Chart 2. Continued...

Guiding Questions	<div>1.How do you perceive that society has changed in recent years, and how has this affected the work of teachers?</div> <div>2.What are the most difficult challenges you currently face as a teacher?</div> <div>3.What do you believe needs to change in the way teachers are trained and supported?</div> <div>4.How do you feel about your own professional development as a teacher?</div> <div>5.What are your greatest concerns when it comes to being a teacher nowadays?</div> <div>6.What personal characteristics do you consider essential to being a good teacher?</div> <div>7.How do you deal with the emotions that arise from your work as a teacher?</div> <div>8.What do you think most helps teachers feel empowered and confident in their profession?</div> <div>9.What are the most rewarding moments you experience as a teacher?</div> <div>10.How do you maintain your passion for teaching even when facing challenges?</div>
Itinerary	<div>Activity: Integrated Panel</div> <div>This dynamic aims to foster reflection and dialogue among Early Childhood Education teachers by addressing issues relevant to their professional practice in contemporary times.</div> <div>Group Division</div> <div>Teachers are divided into two groups (Group A and Group B) based on randomly assigned numbers. Each group receives a set of guiding questions tailored to their backgrounds and experiences.</div> <div>Stage 1: Reflective Dialogue</div> <div>Within their respective groups, teachers engage in a reflective discussion, responding to the guiding questions collaboratively and critically.</div> <div>Stage 2: Sharing Reflections</div> <div>Participants are then paired—one member from Group A and one from Group B—to form discussion duos. Each pair shares the reflections developed in their initial group, encouraging the exchange of diverse perspectives.</div> <div>Stage 3: Expanded Dialogue</div> <div>Following the paired discussions, all teachers gather as a single group to reflect more broadly on the meaning of being an Early Childhood Education teacher for children aged 0 to 3 in contemporary society. This collective dialogue promotes a richer and more comprehensive exchange of experiences and viewpoints.</div> <div>Artistic Reflection Mural Enhancement</div> <div>Teachers are invited to select impactful phrases from the assigned reading and strategically place them on the existing Artistic Reflection Mural. This step offers an additional opportunity for participants to express their thoughts, emotions, and insights in a visual and creative way, further enriching the collective learning and reflective process.</div>

Source: Developed by the authors (2024).

Chart 2. Continued...

	<p>Self-Assessment: A Letter to Oneself</p> <p>In this activity, each teacher is invited to begin their self-assessment journey by writing a personal letter, freely exploring their feelings, thoughts, and reflections after the first day of the course. The letter should address their experience not only as a teacher, but also as an educator and individual. This is intended to be an intimate and personal moment in which each participant is encouraged to express their deepest emotions, concerns, aspirations, and questions in a sincere and authentic way.</p>
Assessment	<p>Once completed, the letter should be carefully sealed and collected to be kept until the final session of the course. At that time, the letters will be returned to their respective authors, offering a unique opportunity for deep reflection on personal and professional growth throughout the program. These letters are more than just written words; they serve as intimate testimonials of a journey of development and learning. They allow each participant to examine not only what has been achieved, but also the transformations experienced and goals reached. Furthermore, they may serve as a powerful tool for fostering emotional self-connection and a deeper understanding of one's personal and professional journey.</p>
	<p>Knowledge Pollination</p> <p>Following the session, the practices discussed and the reflections generated will be shared with the broader community of educators within the institution. Each teacher will be encouraged to implement the ideas in their own classrooms and to share their experiences with colleagues, fostering a network for the exchange of knowledge and innovative pedagogical practices.</p>
Pollination	<p>1. Creation of an Online Forum: A virtual space will be established to enable teachers to continue discussing and sharing their experiences based on the activities carried out during the session.</p> <p>2. Knowledge Multiplication: Participants will be encouraged to disseminate the reflections and methodologies explored in the session, adapting them to their specific contexts and contributing to an ongoing and collaborative professional development culture within the school.</p>

Source: Developed by the authors (2024).

and reflective reading connect participants to nature, thus emphasizing eco-formation. In this way, the session enriches teacher education in a systemic and conscious manner.

Although the PCE methodology demonstrates significant transformative potential, its practical implementation faces considerable challenges. The lack of time for planning and implementing projects was one of the main obstacles mentioned by the teachers, as well as the absence of adequate infrastructure in many schools. Moreover, the need for ongoing institutional support for teacher training and development is evident, suggesting that the mere introduction of new methodologies—without sustained support—may result in frustration and superficial application of the proposed practices.

CONCLUDING REMARKS

Continuing education for Early Childhood Education teachers is essential for the improvement of pedagogical practices and professional qualification, enabling the construction of knowledge aligned with the contemporary demands of education. This study aimed to propose a continuing education course grounded in the principles of transdisciplinarity, eco-formation, and creativity, offering teachers a deeper engagement with the PCE methodology.

Based on the analysis of the collected data, a teaching profile predominantly focused on pedagogical training emerged, with a significant number of participants engaged in specialization courses. The responses revealed specific training needs, particularly concerning inclusive education, innovative methodologies, and the use of digital technologies in pedagogical practice. The research also identified structural and institutional challenges

faced by teachers, such as lack of time and inadequate physical or financial resources for implementing innovative practices. These factors reinforce the need for institutional policies that promote continuing education and ensure support for teachers in applying new methodologies in the classroom.

The course seeks to address these needs by integrating transdisciplinary principles and eco-formative practices, promoting creativity as an essential element for re-signifying teaching in Early Childhood Education. Its hybrid structure offers flexibility and strengthens the connection between theory and practice, encouraging teacher autonomy and fostering the sharing of experiences.

The research was conducted with a specific group of teachers from the municipal education network of União da Vitória – PR, which limits the generalizability of the findings to other educational contexts. Furthermore, the use of a single method—questionnaires—may constrain the depth of insight into participants' experiences. Future studies may enhance this approach through interviews, real-context observations, and longitudinal studies, allowing for a more comprehensive assessment of the impact of continuing education on teaching practices over time.

This study reinforces the importance of continuing education in Early Childhood Education, emphasizing that the adoption of innovative methodologies, such as the PCE, can significantly contribute to the improvement of pedagogical practices. It is hoped that the proposed course may inspire new actions and policies aimed at valuing and supporting the professional development of Early Childhood Education teachers, thereby promoting more reflective, creative, and contextually connected teaching—attuned to the realities of children and contemporary society.

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