

**TRAINING OF ECUADORIAN TEACHERS: FROM  
EXPERIMENTATION AND DIALOGUE WITH THE ARTS**

Formación del profesorado ecuatoriano:  
desde la experimentación y diálogo con las artes

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**DOI:** <https://doi.org/10.5281/zenodo.20935893>**ABSTRACT**

This research aimed to design a comprehensive teacher training model that adopts art as an interdisciplinary methodological axis, capable of transcending the instrumentalist approaches embedded in the current curriculum. It calls for the overcoming of obsolete pedagogical models, especially those grounded in the banking concept of education. A qualitative methodology was proposed, based on collaborative action research, with the implementation of five thematic axes involving 59 participants (teachers and students). The experience integrated active pedagogies (Montessori, Reggio Emilia, Waldorf) with Art Thinking. Key findings indicate that artistic creation fosters transdisciplinary dialogue; the body and sound re-signify educational space; and these practices promote critical thinking beyond technical skills. The study concludes that art is an end in itself and emphasizes the need for public policies that reform school spaces, incorporate art laboratories into teacher training, and promote partnerships with established cultural institutions. It offers guidelines for moving beyond curricular reductionism toward an education centered on interdisciplinarity and human complexity.

**Keywords:** Teacher training, interdisciplinarity, active pedagogies, arts education, complexity.

**RESUMEN**

La investigación tuvo como propósito diseñar un modelo de formación integral que asuma el arte como eje metodológico interdisciplinar, capaz de superar los enfoques instrumentalistas del currículo vigente. Para ello es necesario superar la persistencia de modelos pedagógicos obsoletos, centrados en la concepción bancaria de la educación. En virtud de lo anterior, se propone una metodología cualitativa, basada en la investigación-acción colaborativa, donde se implementaron cinco ejes temáticos con 59 participantes (docentes y estudiantes), combinando pedagogías activas (Montessori, Reggio Emilia, Waldorf) y el Art Thinking. Entre los resultados más destacados se evidencia que: la creación artística promueve el diálogo transdisciplinar; el cuerpo y lo sonoro resignifican el espacio educativo; estas prácticas generan pensamiento crítico, no solo competencias técnicas. Se concluye que el arte es un fin en sí mismo, por lo que requiere políticas públicas que reformulen espacios escolares, incluyan laboratorios artísticos en la formación docente, mediante alianzas con instituciones culturales consolidadas. Por ello, más allá del reduccionismo curricular, se ofrecen pautas para caminar hacia educación centrada en la interdisciplinariedad y la complejidad humana.

**Palabras Clave:** Formación docente, interdisciplinariedad, pedagogías activas, educación artística, complejidad humana.

## INTRODUCTION

The teaching-learning process is a complex task involving individuals who think, feel, love, and interact with one another, with their environment, and nature. These are complex beings (Luhmann, 1998; Moreno Fernández, 2022; Munné, 1999; Rocha Espinoza, 2019; Solana, 1995) whose multidimensionality must be understood at biological, psychological, social, emotional, and other levels. This complexity demands that teacher training move beyond reductionist approaches and embrace holistic perspectives capable of responding to the rapid transformations in society (Bozu & Imbernón, 2016; Vaillant, 2024).

Educators must understand this human constitution, beginning with self-awareness as part of that interaction, in order to grasp the person-process relationship and ultimately transform learning environments into welcoming spaces for those who inhabit them (Lonka et al., 2000; Nasir et al., 2019; Nasir et al., 2021). This transformation requires active teaching and learning methods that center on the learner and acknowledge their unity within multiplicity.

In the Ecuadorian context, this reality is exacerbated by historical gaps in teacher training, where traditional models still prevail, — models that prioritize content delivery over the development of critical and alternative thinking (Alvarado, 2024; Ortiz et al., 2017; Calle García et al., 2017). Therefore, the purpose of this research was to design a teacher training proposal for Ecuadorian schools that considers the learner's unity-in-multiplicity, emphasizing interdisciplinary dialogue and the need to move beyond the instrumentalist view of education. The proposal places art and its fields of knowledge in dialogue with other disciplines—not merely as a tool, but as a dialogic methodological framework.

It does not aim to strengthen the teaching of the official subject Cultural and Artistic Education (ECA), which faces its own challenges, such as the mismatch between teacher training and curricular expectations (Cahuasqui et al., 2020; Choin & Méndez, 2017; Hernández Castro, 2018; Vintimilla-Cordero, 2019). Instead, it seeks to enhance classroom teaching methods across all curricular subjects.

## THEORETICAL FRAMEWORK

Currently, the Ecuadorian Ministry of Education (2024a) reports a student population of 4,202,789. Compared to 2023, this figure shows a decrease of 119,340 children from the education system. The drop is even more significant when compared to the pre-pandemic period (2019), when enrollment reached 4,407,030, indicating a reduction of 204,232 students over the past five years.

This drop is not only a consequence of the pandemic, but also of subsequent events, including the current security crisis (Echeverría, 2024; Llambo et al., 2023; Wolff & Dressler, 2024), which particularly affects low-income families and marginalized urban areas—especially in Ecuador's coastal region, where student numbers fell by 64,024 between the 2023 and 2024 school years (Ministry of Education, 2024b).

In terms of teaching staff, the Ecuadorian system comprises 213,468 teachers serving 4,202,789 students across 16,140 public and private educational institutions. In Guayas province, one of the areas most affected by the above-mentioned challenges, enrollment dropped from 1,065,604 students in 2023 to 1,043,528 in 2024—22,076 fewer students (Ministry of Education, 2024b).

These statistics must be contextualized within broader national issues (post-pandemic recovery, security crisis), as any methodological

shift in teaching and learning must address not only national realities but also local complexity.

As for the curriculum, the current model was designed in 2011 and revised in 2016 to include a proposal for cultural and artistic education, in an attempt to move beyond an instrumental view of art in basic education (Cahuasqui Cevallos & Espinoza Rodríguez, 2020). Another revision in 2023 incorporated learning competencies. However, these changes have not had a significant impact on classroom practice, revealing a gap between curriculum design and effective implementation. This is compounded by the lack of teacher training in competencies from an interdisciplinary perspective—particularly in the arts (Zabalza, 2012).

Teacher training is key to keeping educational practices aligned with real-world conditions. It allows for better responsiveness to diversity (Baidoo-Anu et al., 2023; Miao & Lepeyko, 2023) and fosters a learning environment that welcomes all students and promotes collaborative values (González-Alfaya et al., 2024; Palomares-Montero & Chisvert-Tarazona, 2016). Thus, an interdisciplinary and transdisciplinary training model is essential—one that integrates knowledge areas with arts education, through project-based learning and active methodologies (Bautista, 2021; Romero-Ariza et al., 2021).

This manuscript presents an approach distinct from the STEAM model, which combines science, technology, engineering, art, and mathematics to meet industrial and labor market needs (Aróstegui et al., 2019; Bautista, 2021). STEAM evolved from the earlier STEM concept in the early 21st century. Studies such as Lage-Gómez & Ros (2021) have advanced toward transdisciplinarity, developing artistic products that abstract mathematical concepts like fractals.

That experience—breaking down disciplinary silos to foster classroom dialogue—closely aligns with the vision of a “creative laboratory” classroom. This approach is grounded in liberating education centered on the learner, who becomes a human being that feels, thinks, and builds knowledge through artistic and interdisciplinary dialogue. Learning, then, is both a creative process and a way of becoming—not simply a means of acquiring competencies for the labor market.

The proposed model aims to directly influence teacher training across Ecuadorian institutions. It is rooted in the principles of education for freedom (Dewey, 1988; Freire, 2008; Rousseau, 2019) supported by student-centered pedagogies and emancipatory aims (Giroux, 2013), where art acts as a tool for social transformation (Morin, 2011).

Theoretically, the model is structured on three interconnected levels: dialogic, pedagogical, and artistic. Though categorized separately, these levels form an integrated pedagogical ecosystem, where creativity, complexity thinking, and artistic expression converge.

To guide implementation, five operational levels are proposed.

**Figure 1. Theoretical Foundations of the Proposal**



Source: Prepared by the authors (2025)

As shown and explained in Figure 1, this training proposal is grounded in the principles of complexity, interdisciplinarity, and transdisciplinarity, framed within the category of the dialogic. This includes contributions from authors such as Moreno Fernández (2022), Ruiz (1995), Solana (1995), Morin (1996, 2010, 2011), Anes et al. (1994), and Luhmann (1998), among others.

On the pedagogical level, the proposal draws from student-centered approaches, including those of María Montessori (2012), Ellison (2023), and Randolph et al. (2023). It also incorporates contributions from Reggio Emilia through authors such as Vecchi (2018), Lee-Johnson (2023), and Oviedo & Yu (2023), as well as from Frans Carlgren (2018), whose work with Waldorf education integrates eurythmy, theater, and music into the curriculum.

The artistic dimension is deeply enriched by Art Thinking, as developed by Acaso & Megías (2017) and Acaso (2010), and also by Eisner (2020), who explores how the mind can be developed through artistic creation. Although each level is described independently, the Montessori approach to music reading, Waldorf's eurythmy, and the artistic essence of Reggio Emilia transcend pedagogical boundaries and contribute equally to the artistic dimension.

Despite the different emphases among these authors and pedagogical models (Montessori, Reggio Emilia, Waldorf), they share a transformative vision of education, where children become active, ongoing constructors of knowledge. This contrasts with the banking model of education criticized by Freire (2008) and echoes Malaguzzi's (2021) principle of listening to the "hundred languages" of childhood.

This connection is most evident in how each model treats the arts. Montessori emphasizes sensory links

between music and geometry; Reggio Emilia turns the art studio into a laboratory where painting, theater, and sculpture become cognitive languages; and Waldorf highlights handicrafts and bodily movement as valid pedagogical approaches.

All three converge in designing learning environments where each element of the space fosters exploration and student autonomy. These become shared ecosystems of knowledge, moving beyond decorative or superficial uses of art and revealing interdisciplinary processes that blur the boundaries between art and knowledge.

## MATERIALS AND METHODS

To carry out the pilot implementation of the proposal, a collaborative action research approach was used (Casals et al., 2008). Teachers were able to experience the thematic axes both theoretically and practically, as well as create artistic products. The study followed a qualitative approach, and parts of the process were documented through photographs of the participants' creative work.

**Figure 2.** Contents of the Training Proposal for Implementation



**Source:** Prepared by the authors (2025)

Two educational institutions were selected: one private and one public. These are referred to as Institution 1 (private) and Institution 2 (public). In addition, three groups of teachers and pre-service teachers participated, as follows:

- Group 1: Continuing education course participants
  - Group 2: Alumni from music programs at Universidad de las Artes
  - Group 3: Students from the Pedagogy of the Arts and Humanities
- ties program at Universidad de las Artes in Guayaquil

Table 1. Participants in the Training Experience

| GROUP TYPE    | DESCRIPTION                                                                                                                                                                                                                                                                                                            | PARTICIPANTS |
|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| Institution 1 | Teachers from a private school located in the Mapasingue area of Guayaquil, a low-income neighborhood. The school provides basic education up to 10th grade. Its infrastructure is similar to that of a public institution. Teachers come from a variety of subject areas.                                             | 12           |
| Institution 2 | Teachers from a public school located in the Cerro del Carmen area of central Guayaquil, also a low-income neighborhood. The school offers basic education up to 7th grade. Despite being a public institution, it has a welcoming infrastructure. Parents frequently organize community cleanups for student welfare. | 7            |
| Group 1       | Teachers from various schools who participated in a continuing education course taught by the author of this paper. Most participants are teachers of Cultural and Artistic Education (ECA).                                                                                                                           | 8            |
| Group 2       | Graduates of music programs from Universidad de las Artes who undertook teaching and learning processes with children from various areas.                                                                                                                                                                              | 10           |
| Group 3       | Students from the Pedagogy of the Arts and Humanities program at Universidad de las Artes in Guayaquil.                                                                                                                                                                                                                | 22           |

**Source:** Prepared by the authors (2025)

As an exploratory pilot experience, the first training process began with Institution 1. The starting topics were:

- Complexity, interdisciplinarity, and transdisciplinarity
- Body experimentation and theater games
- Visual experimentation
- Experimentation with film tools and personal history

The contents were implemented through active learning methodologies, with a strong emphasis on collaborative learning as a foundation for knowledge construction through community exchange (Colomina & Remesal, 2015; Singh, 2024). The flipped classroom approach also played a key role, with prior reading preparation followed by group discussion during training sessions (Deng, 2023; Salas-Rueda, 2021).

In subsequent experiences with Institution 2, Group 1, Group 2, and Group 3, the pedagogical content was expanded to include student-centered models such as those proposed by Montessori, Reggio Emilia, and Waldorf. These experiences are usually available only to families who can afford alternative schooling in Ecuador.

Participants created artistic works as part of their training, and each activity included a reflective component. They were prompted to ask themselves: *In what way is what we are doing related to mathematics, physics, social sciences, natural sciences, or other disciplines?* The goal was to understand interdisciplinary dialogue while engaging in artistic exploration—aligning with the vision of Acaso & Megías (2017): *transform education through the arts and the arts through education* (p. 31).

RESULTS

To launch the first thematic axis of the training proposal, participants



began by responding to the question: How do you dream of education? They answered through individual drawings and then engaged in a group discussion. This activity was designed to gather perceptions about the current educational system from the teachers' point of view and to evaluate initial expectations. It became a springboard for rethinking methodo-

logical approaches and for envisioning an education model centered on students as multidimensional human beings. At this stage, the concepts of complexity, interdisciplinarity, and transdisciplinarity were introduced.

**Table 2. Consolidated Results of Each Thematic Axis**

| THEMATIC AXIS OF THE PROPOSAL                                                                                                                                                        | EVIDENCE                                                                           |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| <p><b>(1) Complexity, interdisciplinarity, and transdisciplinarity</b></p> <p>Starting point through the question: <i>How do you dream of education?</i></p>                         |   |
| <p><b>(2) Body, theater games, eurythmy, and education</b></p> <p>Awareness of being a bodily entity, recognizing the body's presence and importance in the educational process.</p> |  |

|                                                                                                                                                                                         |                                                                                    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| <p><b>(3) Visual tools for interdisciplinary dialogue</b></p> <p>Modeling and carving activities, followed by a reflection to establish connections with different disciplines.</p>     |   |
| <p><b>(4) Sound experimentation</b></p> <p>Creation of materials for musical reading and their implementation in educational institutions.</p>                                          |   |
| <p><b>(5) Student-centered methodologies</b></p> <p>Application of Montessori musical reading, Waldorf eurythmy, and interdisciplinary artistic creation inspired by Reggio Emilia.</p> |  |

**Source:** Prepared by the authors (2025)

The second axis—body experimentation—was central to the proposal. Once participants acknowledged the multidimensional nature of the human being, emphasis was placed on recognizing the body’s essential role in education. Participants explored the idea of “being a body,” reflecting on how educational systems and classroom structures can often lead to bodily disconnection or suppression (Foucault, 2002). This section involved activities such as theatrical play, role-playing, and movement-based exercises (Rosa et al., 2019; Vygotsky, 1982).

Visual tools used in the third axis allowed for tangible artistic productions that facilitated interdisciplinary dialogue and opened pathways to transdisciplinarity. For example, the “turtle exercise” involved modeling a turtle from clay. The students then analyzed its shape, dimensions, and the geometric patterns on its shell—connecting the activity to mathematics, natural and social sciences, and cultural studies. One student from the Pedagogy of the Arts program, inspired by a visit to the Museo Antropológico de Arte Contemporáneo (MAAC), developed a final project combining two Huancavilca cultural forms: a whistle turtle and a whistle bottle.

In the fourth axis—sound experimentation—the proposal drew from the Dalcroze Method, which emphasizes using the body and nearby materials to explore sound (Seitz, 2005). Montessori's concept of musical reading was also incorporated, highlighting how children, from the moment they learn to read text, can also read music using specially designed didactic materials. This approach was implemented by Ortiz et al. (2024) in a public school in Cañar, Ecuador, as part of a final degree project.

The fifth axis integrated student-centered methodologies across all participating groups. This confirmed that the pedagogies of Waldorf, Montessori, and Reggio Emilia allowed for deep interdisciplinary connections between the arts and other areas of knowledge. Examples included eurythmy, which connects music and body movement in Waldorf education (Carlgrén, 2018); musical reading in Montessori; and the expressive languages encouraged by Reggio Emilia, in line with Malaguzzi's vision (Vecchi, 2018).

## DISCUSSION AND ANALYSIS

The proposed teacher training model aims to transform teaching and learning methodologies through constant reflection on experience. This reflection led to the definition of five interrelated thematic axes that promote continuous dialogue across disciplines. The model strengthens educational processes through interdisciplinary and transdisciplinarity, offering a deeper understanding of a world conceived as an interactive ecosystem.

Traditional education, by contrast, tends to ignore this complexity. It often separates the body from the learning environment—an inheritance from Platonic thought that has yet to be overcome—and reinforces disciplinary silos that imply certain fields are superior to others. This proposal challenges such assumptions, emphasizing

that all disciplines are intimately connected to the whole (Morin, 1999).

The research thus questions three foundational aspects of Ecuador's current educational model:

- **Pedagogical and curricular reductionism:** Although the national curriculum was revised in 2016 and 2023, it still prioritizes disciplinary fragmentation. This proposal embraces Morin's (2011) notion that transdisciplinarity is viable when art becomes an integrated axis. The exercises developed in Axes 3 and 5 validate art as a curricular component that can deconstruct knowledge hierarchies (Eisner, 2020).
- **Instrumentalized teacher training:** Many educators continue to rely on Freire's (2008) banking model of education, which emphasizes passive knowledge transmission. This aligns with the concerns raised by Alvarado (2024) and Ortiz et al. (2017). However, the outcomes of Axes 1 and 2 reveal that the body and collective creation are essential for revitalizing educational practice. These findings resonate with Giroux's (2013) argument that critical pedagogy must embrace the aesthetic and embodied dimensions of learning.
- **Going beyond STEAM:** While STEAM education seeks to align learning with labor market demands (Bautista, 2021), the experiences in Axes 4 and 5 show that artistic interdisciplinarity fosters deep thinking (Acaso & Megías, 2020) rather than just technical skill development. This distinction is key: while STEAM uses art to support instruction, this research proposes art as an educational end in itself, consistent with the principles of Montessori (2012) and Waldorf education (Carlgrén, 2018).



In essence, this training model is not limited to preparing art teachers; it is designed for educators trained under conventional, repetitive approaches—products of a cycle that privileges tradition and productivity. While STEAM has made notable contributions, the “classroom as a creative laboratory” model offers a more humanistic experience of learning through the arts. Here, the aim is not to meet productivity goals, but to promote sensitive, reflective, and creative individuals.

That said, structural limitations persist. Many Ecuadorian schools lack adequate spaces for implementing artistic activities—an issue that reinforces Foucault’s thesis on how school infrastructure disciplines the body. This reality highlights the need for state-driven innovation and sustained investment in educational reform.

Looking ahead, the authors hope that the five thematic axes and the pilot programs described will lead to the democratization of the model, making it accessible to all teachers in Ecuador. However, scalability requires more than willpower: it demands financial support, suitable facilities, and fair compensation for educators, taking cues from successful systems like Finland’s.

## CONCLUSIONS

As shown throughout this study, the aim of the research was to consolidate a training proposal for teachers in the Ecuadorian education system based on three essential pillars: interdisciplinarity, embodied pedagogy, and art as an epistemology. The proposal was implemented through five thematic axes, which were developed in experiential formats with various participant groups.

One of the most valuable outcomes of the course was the convergence of multiple learning methodologies. Rather than adhering to a single

pedagogical model, the process fostered ongoing dialogue among methods, just as it did among disciplines.

Artistic integration in this context transcends the boundaries of the school curriculum, generating hybrid methodologies that bring together Montessori’s work on musical reading, Waldorf’s eurythmy, and Reggio Emilia’s visual laboratories. These experiences help bridge the longstanding divide between theory and educational practice, as cognitive processes are understood in their full complexity. The creative outcomes generated by the participants embody a form of aesthetic thinking, where the rational and the sensory converge.

By engaging in interdisciplinary artistic dialogue, teachers and pre-service teachers were able to experience reflective creative processes. These processes allowed them to become aware of their own creative capacities while simultaneously fostering critical thinking—not as superficial skill acquisition, but as a form of deep thought.

The study recognizes that, in order for this proposal to move beyond theoretical design, it must be implemented in real-world school settings. Doing so would allow its impact to be evaluated in children’s development across multiple generations of both students and teachers.

To move beyond a theoretical model and toward systemic implementation, the following actions are recommended:

- Implement public policies that make artistic activities a required component of teacher education.
- Design hybrid methodologies (Montessori–Waldorf–Reggio Emilia) that transcend the gap between theory and practice.
- Establish partnerships between schools and cultural centers, in-

tegrating them as extensions of the classroom.

- Promote creative processes as part of the development of aesthetic reasoning.
- Redesign school spaces to include sensory-rich classrooms.
- Document best practices and measure the impact of artistic competencies.
- Train teachers in artistic competencies.
- Create qualitative rubrics that assess creative processes—not just final products.
- Expand competency-based education frameworks to include complex thinking and interdisciplinary integration.

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