IMPLEMENTATION OF ENVIRONMENTAL POLICY AS A CORE ELEMENT OF THE INITIAL TEACHER TRAINING CURRICULUM AT THE TEACHER TRAINING COLLEGE   IN LIMA, 2025

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Abstract

The research analyzed the implementation of environmental policy as a core element of the curriculum in initial teacher training at a teacher training college in Lima in 2025. Using a qualitative approach and case study design, 26 key actors participated, including teachers, students, and specialists. Through semi-structured interviews and analysis with Atlas.ti, five subcategories were identified: conception and regulations, curriculum articulation, pedagogical practices, facilitating factors and barriers, and perceived impacts. The findings revealed partial implementation, based on individual efforts rather than a solid institutional strategy. There was evidence of limited regulatory knowledge, limited environmental practices, and obstacles such as lack of training, resources, and leadership. Although positive impacts are recognized, they are incipient. The study concludes that it is necessary to strengthen the articulation between regulations, curriculum, pedagogy, and evaluation through training strategies, sustainable curriculum redesign, and clear institutional policies that ensure the effective integration of the environmental approach in teacher training.

Keywords: Environmental policy; curriculum design; initial teacher training; environmental education; educational sustainability; cross-curricular curriculum; case study.

I. INTRODUCTION

This research analyzes how environmental policy is implemented as the core of the curriculum in initial teacher training at a teacher training college in Lima in 2025. In a global context where environmental education is key to sustainable development, teacher training faces the challenge of integrating content and approaches that prepare future educators as agents of change (Escobar & Useche, 2022; Rubina et al., 2023). Globally, UNESCO has shown that only 25% of education systems in developing countries incorporate sustainability as a cross-cutting theme, which limits the achievement of the SDGs (Espinoza & Ortiz, 2021). This situation is also reflected in Latin America and Peru, where environmental education is still implemented in a partial and uneven manner (Panduro et al., 2023; Rodríguez, 2024).

From a qualitative perspective, the study adopts an interpretive case study design, which allowed us to understand the experiences of teachers, administrators, and students from their own perspectives and experiences (Denzin & Lincoln, 2018). Twenty-six key educational actors participated, and semi-structured interviews were used as the main technique. The analysis was carried out using inductive coding and thematic categorization in Atlas.ti, complemented by Sankey-type visualizations, allowing for a holistic understanding of the phenomenon. The theoretical framework was based on the postulates of critical curriculum theory (Stenhouse, 1987) and Education for Sustainable Development (Sterling, 2001; Tilbury, 2011).

The findings were organized into five subcategories: conception and regulations, curriculum articulation, teaching practices, facilitating factors and barriers, and perceived impacts. In terms of normative conception, it was found that there is weak ownership of legal frameworks such as the General Environment Law and the National Environmental Education Plan, which limits their effective implementation (Sabatier, 2007; UNESCO, 2022). Despite the existence of public policies, only 28% of teacher training schools integrate environmental content into their curriculum (MINEDU, 2021), revealing a gap between the norm and pedagogical practice.

Curriculum coordination and graduate profiles show limited inclusion of the environmental approach as a cross-cutting theme, with little presence in curricula and teacher competencies (Addine, 2020). This reflects a disconnect between training plans and current environmental challenges. In addition, many training programs remain rigid and lack interdisciplinarity, which limits a comprehensive view of sustainability (Gómez & Hernández, 2021; Martínez et al., 2022). According to UNESCO (2022), this lack of integration compromises the training of educators capable of teaching from a critical environmental perspective.

Teaching practices are sporadic and motivated mainly by individual initiatives rather than institutional guidelines. Activities related to sustainability are infrequent, and specialized teaching resources are insufficient, especially in rural areas (Tilbury, 1995; Wilsof, 2018). In addition, less than 35% of institutions have adequate materials to address issues such as climate change or water management (Saoya, 2022). This reality limits teachers' ability to promote meaningful learning related to the environment.

Enabling factors and barriers were also key findings. It was found that a lack of specific training, scarce resources, resistance to change, and weak institutional leadership hinder the incorporation of environmental education (Fullan, 2007; Leff, 2018). Most teachers lack training in sustainability, and there are no robust evaluation and monitoring mechanisms to support the process (Pérez & Ramírez, 2023). This reflects a disconnect between regulatory frameworks and everyday educational practice.

In terms of perceived impacts, although some improvements in students' environmental attitudes have been observed, these changes are still incipient and difficult to measure (Sterling, 2001). Only 35% of students in training consider the environmental crisis relevant to their professional preparation (López, 2020). Educational actors recognize the importance of environmental education but point out that its incorporation lacks coherence and systematicity. The absence of formal evaluations makes it difficult to accurately assess the real scope of these practices (UNESCO, 2022).

The study highlights that to move towards teacher training aligned with the Sustainable Development Goals, it is necessary to redesign educational programs with a critical, interdisciplinary, and transformative approach. This involves strengthening institutional policies, guaranteeing resources, training teachers, and establishing sustainable evaluation systems (Huckle & Sterling, 1996; Schlosberg, 2007). Educational institutions must take an active role in promoting environmental justice by training teachers who can educate with ecological awareness based on ethical practices and a commitment to their environment.

This research shows that the implementation of environmental policy in the curriculum design of initial teacher training in Lima still faces significant structural challenges. Although there have been regulatory advances, effective coordination between the curriculum, teaching practice, and environmental assessment remains limited. A profound transformation of the education system is needed to train teachers who are committed to sustainability and capable of facing contemporary socio-environmental challenges. This study provides evidence, reflections, and proposals that can guide more coherent and transformative education policies within the framework of SDGs 4 and 13.

II. METHODOLOGY

This research is framed within the interpretive-constructivist paradigm, which understands educational reality as a social construct that is dynamic and loaded with meanings generated by the actors themselves (Denzin & Lincoln, 2018). In this sense, a qualitative approach was adopted, which is relevant for exploring educational phenomena in depth from the voices, perceptions, and experiences of the participants (Creswell & Poth, 2018). The methodological design was an interpretive-descriptive case study, which enabled a situated understanding of the process of implementing environmental policy as the core of curriculum

design in a teacher training school in Lima (Merriam, 2009; Stake, 1999; Yin, 2018). This research, classified as basic, aimed to generate theoretical knowledge that contributes to academic reflection and the strengthening of future research on the link between curriculum and educational sustainability (Sabino, 2014).

We worked with a purposive sample of 26 educational actors directly involved in the training process, including specialist teachers, general course teachers, senior students, institutional managers, and curriculum specialists. The inclusion criteria considered a minimum of one year's experience in the institution and participation in activities related to the environmental approach. The selection of informants was based on non-probabilistic sampling by criteria, in accordance with the nature of the study, which allowed for the capture of diverse experiences and discourses from multiple perspectives (Taylor & Bogdan, 1987). This approach ensured in-depth access to the field, fostering the development of authentic links with participants and the construction of meaningful data for analysis.

Semi-structured interviews were used to collect data, a tool validated by the Content Validity Coefficient (Aitken, 1985), which ensured its relevance and clarity. These interviews were designed in line with the five analytical subcategories: normative conception, curriculum articulation, pedagogical practices, facilitators and barriers, and perceived impacts. The interviews were conducted in agreed-upon locations, recorded with the participants' permission, and supplemented with field notes. The analysis of the information followed an open and axial coding process, inspired by grounded theory (Strauss & Corbin, 1990), using Atlas.ti software to facilitate thematic categorization and visual representation of relationships using Sankey diagrams (Friese, 2019).

Throughout the process, the ethical principles established by César Vallejo University were observed, in accordance with the Code of Ethics in Research (RCU No. 470-2022-UCV). Informed consent, anonymity, and confidentiality of participants were guaranteed, ensuring that the data would be used exclusively for scientific purposes. Likewise, the methodological rigor criteria proposed by Lincoln and Guba (1985) were applied, ensuring credibility through triangulation of sources and techniques, transferability with detailed contextual descriptions, dependence on accurate documentation of the research process, and conformability through analysis based on empirical data. This approach allowed us to build a comprehensive understanding of the implementation of environmental policy from the perspective of its protagonists.

III.   RESULTS

The results showed that the conception of environmental policy in teacher training colleges is still partial and fragmented. Although there is some knowledge of national regulations such as the PEN and the PEAE, their appropriation by educational actors is limited and, in many cases, reduced to a superficial or merely formal understanding. The interviews revealed that environmental policy has not been fully internalized as a structuring axis of the curriculum, but rather as an institutional obligation of an administrative nature, disconnected from everyday teaching practice.

Figure 1 Presence of institutional regulations and guidelines on environmental policy at the Teacher Training College in Lima.
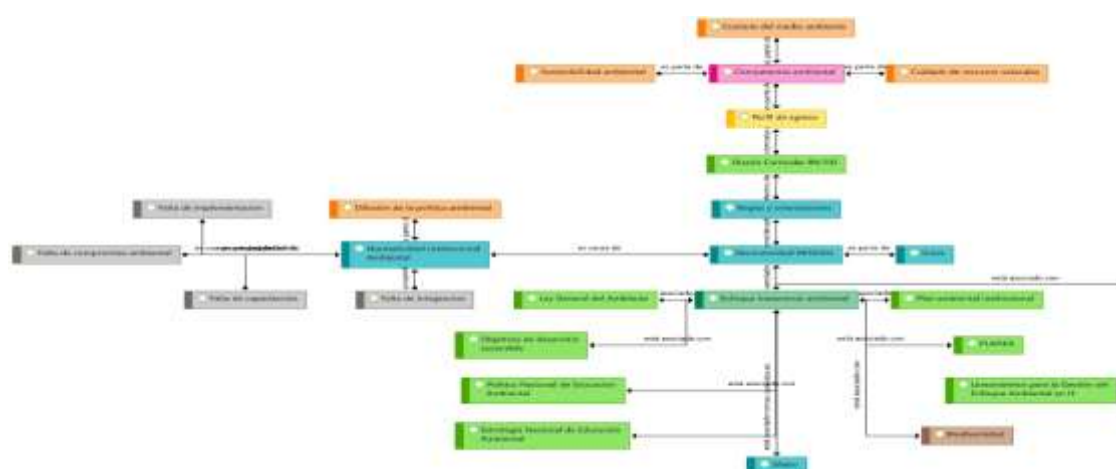
Note: Prepared in-house.

In terms of curriculum design, it was observed that the environmental approach is present in a tangential way in some subjects and projects, but it is not manifested as a consolidated cross-cutting theme. The curriculum shows little integration of the environmental approach in the graduate profile, which limits its impact on teacher training. This situation creates a gap between the educational intentions of the official curriculum and the competencies required to respond to the socio-environmental challenges of the current context.

Figure 2 Cross-cutting theme in the curriculum design and graduate profile of initial teacher training.
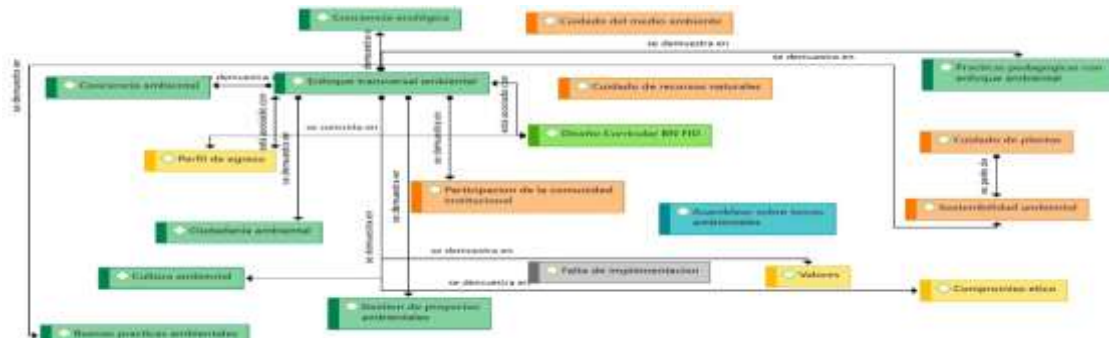
Note: Prepared in-house.

In terms of teaching practices, teachers acknowledged that they had carried out environmental activities at certain times, especially on commemorative dates such as World Environment Day. However, these actions were isolated, sporadic, and dependent on personal initiatives, without sustained institutional planning or evaluation of results. The lack of technical support, resources, and opportunities for environmental education training had a negative impact on the continuity and consistency of these experiences.

Figure 3 Teaching practices of teachers in relation to the implementation of the environmental approach within the educational process.
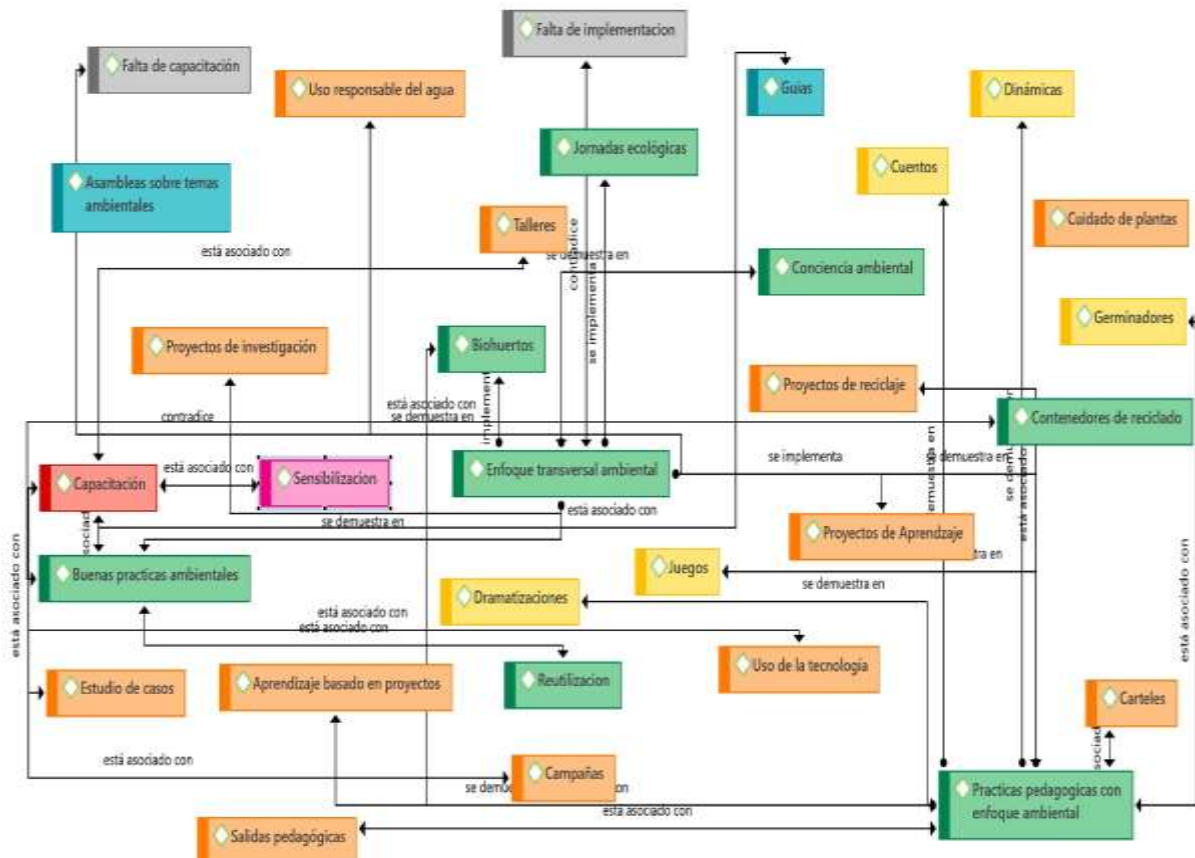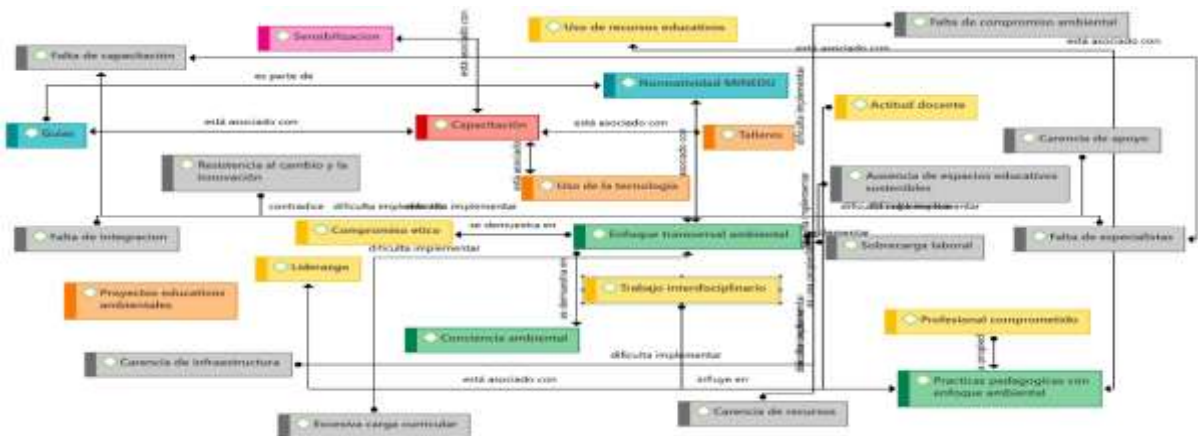

Note: Prepared internally.

With regard to facilitating factors and barriers, various elements were identified that influence the implementation of the environmental approach. Among the facilitating factors mentioned were the willingness of some teachers and the existence of national guidelines. However, the barriers were more decisive: lack of institutional leadership, scarce teaching resources, absence of specialized training, weak organizational environmental culture, and poor integration of the approach into the institution's internal evaluation system.

Regarding perceived impacts, most interviewees acknowledged that, although some significant experiences have been generated, their impact has been limited and difficult to assess. There are no clear indicators or monitoring systems to measure the influence of the environmental approach on teacher training. This lack of evaluation criteria makes it impossible to identify concrete progress or setbacks in the curriculum implementation process, which compromises the sustainability of environmental initiatives over time.

Figure 4 Enabling factors and barriers affecting the implementation of environmental policy

Note: Prepared in-house.

Finally, the results highlighted the urgent need to strengthen the link between environmental policy and the educational curriculum. Educational stakeholders agree that a clear, sustained, and participatory institutional strategy is needed to integrate the environmental approach into all dimensions of teaching, from curriculum planning to formative assessment. They also propose promoting teacher training programs, developing contextualized materials, and establishing institutional policies to ensure the effective and lasting integration of the environmental approach into initial teacher training.

Figure 5 Results or impacts perceived by educational stakeholders in the training and performance of future teachers
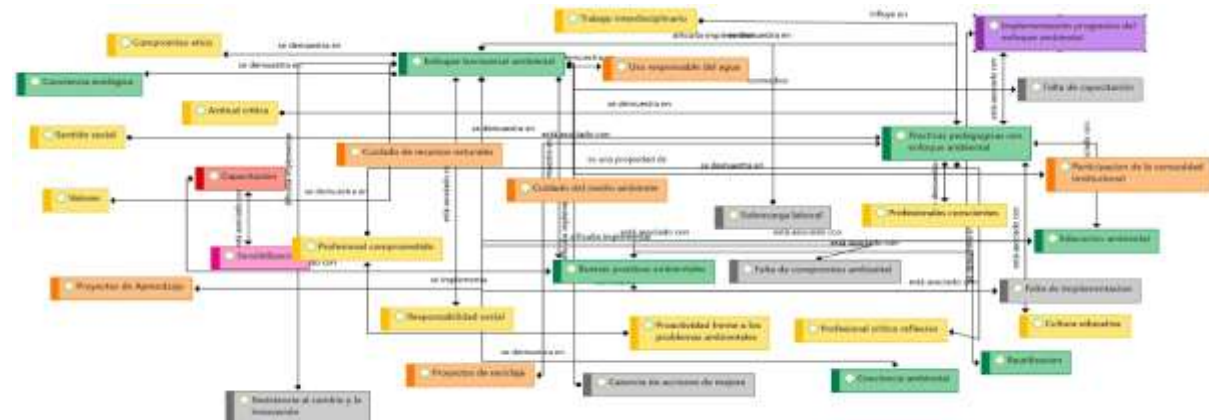
Note: Prepared in-house.

IV.   DISCUSSION

The implementation of environmental policy in the initial teacher training curriculum is in its infancy and fragmented. According to the testimonies gathered, "little work has been done, there is no clear directive" (D1), which reflects a lack of institutionalization. This weakness in curriculum ownership highlights the need to strengthen strategic planning so that the environmental approach no longer depends on personal initiatives. This finding coincides with the perception of educational actors, who expressed a lack of knowledge of the regulatory framework. Thus, although environmental policy is present in documents, it has not been internalized as part of the institutional educational project.

There are significant gaps between the curriculum and educational sustainability. Some teachers pointed out that "the curriculum does not explicitly include an environmental focus" (D3), which hinders its real integration into training. This finding is consistent with the limited presence of an environmental focus in the syllabi reviewed. Although there are cross-cutting competencies in the national framework, these are not translated into concrete pedagogical actions. The lack of support in curriculum design becomes a structural obstacle. Thus, the gap between regulatory guidelines and everyday practice remains a persistent challenge.

In relation to pedagogical practices, sporadic and isolated actions were identified. As one teacher mentioned: "We have worked on environmental issues, but without systematic planning" (D5). This statement reflects an implementation that responds more to individual will than to institutionalized policy. Activities are concentrated on specific dates and are not part of the ongoing teaching process. This limits their educational impact on students. Therefore, a clear methodological proposal is needed to consolidate these practices in the development of environmental competencies.

The factors that facilitate implementation are insufficient in the face of the multiple barriers identified. According to the participants, "there are not enough resources or training" (D4), which weakens the sustainability of the approach. In addition, a weak institutional culture with regard to the environment was evident. Added to this is the limited participation of management in promoting environmental projects. This situation creates an unfavorable environment for pedagogical innovation. Consequently, it is urgent to strengthen leadership and ensure the minimum conditions for effective implementation.

One of the critical aspects is the lack of evaluation of the impact of the environmental approach. The interviewees agreed that "there are no indicators to know if we are doing it right" (E2), which makes it impossible to measure progress. This lack of monitoring limits evidence-based decision-making. The environmental policy lacks a monitoring system to provide feedback on the training process. This represents a significant institutional weakness. Evaluation must therefore be an integral part of the environmental approach from a training and transformative perspective.

espite the limitations, some significant experiences promoted by committed teachers were recognized. As one of them put it: "Some teachers have incorporated these issues because we believe they are important" (D2). These initiatives demonstrate the potential of the educational community when personal convictions exist. However, their sustainability depends on the consolidation of a clear institutional policy. Educational transformation requires a shift from individual goodwill to solid organizational structures. This will enable lasting and scalable changes in teacher training.

The students interviewed showed interest in the environmental approach but also expressed a critical perception: "we see that little is said about the subject in class" (E4). This statement highlights the gap between institutional discourse and classroom experience. Despite the official discourse, sustainability training is not properly integrated into teaching practices. This limits the development of critical and responsible awareness in future teachers. Student participation must be promoted as an agent of change through interdisciplinary projects and active learning activities.

Finally, the research highlighted an urgent need to consolidate a systemic vision of the environmental approach. This implies rethinking the curriculum from a cross-cutting and interconnected perspective. As stated in the report: "it is necessary to strengthen the articulation between the normative, pedagogical, and evaluative aspects." Only then can coherent and effective implementation be achieved. The challenge lies in embracing sustainability as a core educational focus, beyond isolated content. Teacher training must prepare educators to face environmental challenges with ethical responsibility and a commitment to transformation.

V.   CONCLUSIONS

This research concludes that the implementation of environmental policy as a core element of the curriculum in initial teacher training at the Lima Teacher Training College is characterized by being partial, disjointed, and dependent on individual initiatives. Although there is a recognized regulatory framework in

national documents, it has not been properly internalized or operationalized in institutional curriculum instruments, which limits its influence on training practices and the profile of teacher graduates.

It was evident that the curricular articulation of the environmental approach lacks cross-cutting coherence, manifesting itself only incidentally in some subjects or projects. The absence of clearly integrated environmental competencies in the curriculum, as well as the weak connection between regulatory frameworks and classroom activities, reflects a structural gap that needs to be addressed from a systemic perspective and with a vision of educational sustainability.

Teaching practices are sporadic and poorly systematized, with no institutional strategy to promote their continuity or training spaces to support their application. The willingness and commitment of some teachers stand out as facilitating factors, but they do not compensate for structural deficiencies in resources, institutional leadership, and environmental culture within the teacher training college.

The main barriers identified include poor teacher training on environmental issues, lack of organizational leadership, limited availability of resources, and the absence of an evaluation system to assess the impact of the environmental approach on teacher training. These structural and attitudinal limitations prevent the consolidation of a solid environmental policy in the institution.

Diaz (2025) concludes that teacher training colleges, in their role as educators of future teachers, have a responsibility to take a proactive stance in the face of the socio-environmental crisis. This requires rethinking their curriculum model from a transformative perspective that articulates the normative, pedagogical, and evaluative aspects in an environmental context, thus generating a graduate profile cmmitted to sustainability and ecological justice.

From Diaz's (2025) perspective, the challenge lies not only in including the environmental approach as content, but in understanding it as an ethical and political matrix that must permeate all teacher training. This research allowed me to confirm that environmentally meaningful educational change requires reflective processes, institutional will, and conscious curricular decisions that train educators capable of leading transformations toward a more just and sustainable future.

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