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VIDEO GAMES AS CULTURAL EXPRESSIONS IN THE DIGITAL HUMANITIES

Videojuegos como expresiones culturales en las humanidades digitales

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Abstract

This article analyzes the pedagogical impact of the educational video games Intiñam and Intiñam Trivia on the development of techno-pedagogical competencies among university students enrolled in teacher education programs. Employing a transdisciplinary philosophical framework, the study employs a mixed-methods approach based on the Integrated Theoretical Model of Gamification in E-Learning Environments (E-MIGA), applied to a sample of 396 students. The analysis encompasses four dimensions: cognitive, social, emotional, and narrative.

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Results indicate high levels of conceptual understanding (95%), social engagement (97%), and identity-based connection with the game narrative (95%), demonstrating the effectiveness of these tools in aligning the national curriculum with playful, contextualized, and meaningful learning experiences. Moreover, the results show that video games function as reflective, creative, and symbolic devices that reframe learning through territoriality, interculturality, and complex thinking. The main limitations include the institutional concentration of the sample and the predominance of quantitative data. Future research should expand into rural and intercultural contexts and incorporate more robust qualitative methodologies. In conclusion, this research demonstrates that educational video games designed from a local, critical, and transdisciplinary perspective constitute powerful pedagogical tools for fostering a digital, critical, and socially engaged citizenship.

Keywords

Transdisciplinary education; Teacher education; Gamification; Digital humanities; Educational innovation; Critical thinking; Learning technologies; Educational video games.

Resumen

El presente artículo analiza el impacto pedagógico de los videojuegos educativos Intiñam e Intiñam Trivia en la formación de competencias tecnopedagógicas de estudiantes universitarios en carreras de educación. Desde un enfoque filosófico transdisciplinar, se emplea una metodología mixta sustentada en el Modelo Teórico Integrado de Gamificación en Ambientes E-Learning (E-MIGA), aplicada a una muestra de 396 estudiantes. El estudio abarca cuatro dimensiones: Cognitiva, social, emotiva y narrativa. Los hallazgos reflejan altos niveles de comprensión conceptual (95 %), compromiso social (97 %) y conexión identitaria con la narrativa del videojuego (95 %), y evidencian la eficacia de estos recursos para articular el currículo nacional con experiencias lúdicas, contextualizadas y significativas. Asimismo, se constata que los videojuegos operan como dispositivos reflexivos, creativos y simbólicos que resignifican el aprendizaje desde la territorialidad, la interculturalidad y el pensamiento complejo. Entre las limitaciones se identifica la concentración institucional de la muestra y el predominio del enfoque cuantitativo. Se recomienda extender la investigación hacia contextos rurales e interculturales e incorporar metodologías cualitativas más significativas. En síntesis, esta investigación demuestra que los videojuegos educativos diseñados con enfoque local, crítico y transdisciplinar constituyen potentes herramientas formativas para la construcción de una ciudadanía digital, crítica y comprometida con su entorno.

Palabras clave

Educación transdisciplinar, Formación docente, Gamificación, Humanidades digitales, Innovación educativa, Pensamiento crítico, Tecnologías del aprendizaje, Videojuegos educativos.

Introduction

At present, the digital humanities have emerged as a transdisciplinary academic space where traditional humanistic epistemologies converge with disruptive methodologies characteristic of the digital and technological era. According to Berry (2012), this convergence generates new forms of production, management, and dissemination of philosophical, artistic, historical, and literary knowledge. Burdick et al. (2012) argue that the digital humanities go beyond mere technological instrumentalization and raise fundamental philosophical questions about how digital media transform our conceptions of culture, education, and society. In the field of education, Berry and Fagerjord (2017) contend that the digital humanities enable a rethinking of innovative, play-based pedagogical methodologies through the use of interactive narratives, video games, and virtual learning environments, thereby opening new possibilities for teaching in the experimental, social, and human sciences.

For this reason, Luhmann and Burghardt (2021) consider that the digital humanities are currently undergoing a process of negotiation to establish themselves as an independent discipline, whose evolution reveals a distinct identity marked by a strong transdisciplinary orientation linked to computational linguistics and information science. Cosgrave (2019) maintains that the transdisciplinary essence of the digital humanities lies in their capacity to integrate distant approaches; according to the author, "digital methods function as epistemological bridges that connect traditionally isolated disciplinary domains, creating bidirectional flows of knowledge in which the humanities enrich technological development just as they are transformed by it" (p. 27). This process goes beyond an interdisciplinary approach, as it generates "hybrid methodological spaces" in which analytical categories from the social sciences, the humanities, and computer engineering are recombined to address complex problems that no single discipline could resolve independently (Cosgrave, 2019; Torres-Toukoumidis et al., 2019).

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In Latin America, the development of the digital humanities is characterized by a critical approach that questions inequalities in access to technology and highlights the need to adapt these tools to local contexts, particularly in rural settings (Gutiérrez de la Torre, 2020; Cardozo & Rúa Penagos, 2023). From a critical paradigm, Fiormonte and Sordi (2019) warn about the neocolonial cultural dominance exerted by major technology corporations—Google, Amazon, Facebook, Apple, and Microsoft (GAFAM)—over the production of digital knowledge. They propose that digital humanities in the Global South should promote a critical appropriation of technology in order to defend the intercultural and epistemic diversity of the region (Verhelst Hoyos, 2024). Han (2017) argues that global technology corporations have established a post-Foucauldian digital panopticon in which, unlike the nineteenth-century prison model, surveillance operates through voluntary self-discipline: users, under the illusion of freedom, become both custodians and prisoners of the system by surrendering their personal data. However, the objective is not to reject technology, but to foster critical digital literacy so that citizens cease to be naïve users and instead become active agents of technological ownership—placing technology at the service of communities, rather than the reverse.

In Ecuador, the COVID-19 pandemic accelerated the adoption of digital platforms in educational settings, leading to significant advances in the integration of educational technologies (Aguilar et al., 2021). The future of the digital humanities does not lie in Silicon Valley, but in Ecuadorian classrooms, where teachers and students must learn to "hack" the system creatively. Although structural challenges persist—such as the digital divide and insufficient teacher training in technopedagogical competencies—the digital humanities gain particular relevance because they enable a critical analysis of play-based educational innovation initiatives. In the face of cultural imperialism driven by GAFAM monopolies, which control approximately 80% of global digital traffic and impose a hegemonic worldview, the digital humanities emerge as a tool of resistance. Within this framework, playfulness transcends the simple notion of entertainment and becomes a philosophical category deeply linked to meaning-making and the practice of freedom (Huizinga, 2007; Caillois, 2001). From the perspective of the digital humanities, play emerges as a fertile terrain

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for symbolic and cognitive experimentation—a space in which human beings can critically engage with reality through simulations, meaningful choices, and participatory narratives. According to Morin (1999), play can be understood as an act of complex thinking—a crucible in which emotion, ethics, and knowledge converge, shaping a pedagogy that cultivates both creativity and situated reflection. In this sense, play becomes an epistemological device, a translator capable of transforming cultures, knowledge systems, and territories of Ecuador into a formative experience that invites thinking beyond disciplinary boundaries.

More specifically, it has been demonstrated that video games, within intercultural contexts, facilitate knowledge development and comprehension in primary education classrooms (D'Antoni, 2016), promote coexistence among students (Fuentes & Ríos, 2022), and strengthen national identity as well as the revalorization of indigenous cultures (Barbecho-Benalcázar et al., 2020). Consequently, video games offer significant potential for generating and transforming cultural, political, and social meanings due to their performative nature and their social and interactive components (Martínez, 2012).

From this perspective, the present study examines, through a transdisciplinary philosophy of education, how educational video games operate as instruments of cultural resistance in Ecuador (Dravet et al., 2020). It explores how their design—situated at the intersection of disciplines and cultures—strengthens local identity, recovers ancestral knowledge, and promotes new forms of teaching within the field of the digital humanities.

Methodology

The study is structured around a general objective consisting of examining the ways in which video game–mediated learning contributes to the construction of educational, ethical, and epistemological meanings. From a transdisciplinary philosophical approach, the use of digital technologies is articulated with situated learning processes, contextualized curricular content, and narrative

structures of representation (Aguilar & Collado, 2023). To achieve this purpose, the following specific objectives are proposed: (1) to describe the functioning of educational video games in relation to the cognitive, social, narrative, and emotional dimensions of the E-MIGA model; (2) to identify correspondences between the ludic design of the video games and the curricular content of the Ecuadorian educational system; and (3) to analyze the articulations among the symbolic, technological, and philosophical-educational elements present in the comprehensive training environment.

The study adopts a mixed-methods approach. This methodological choice responds to the need to understand video game–mediated educational experience as a phenomenon composed of measurable dimensions and symbolic processes involving reflection and meaning-making (Tashakkori & Creswell, 2008). On the one hand, the quantitative phase is implemented through the analysis of data related to perception, conceptual appropriation, and user experience, organized according to the four dimensions of the E-MIGA model (Torres-Toukoumidis et al., 2017): narrative, cognitive, emotional, and social. On the other hand, the qualitative phase complements the inquiry through conceptual analysis of responses, focusing on philosophical categories related to the subject, nature, territory, community, and technology (Gerring, 2017).

The methodological design adopted in this research is structured as a case study with a critical-hermeneutic orientation. Its purpose is to interpret the formative experience generated through the use of the educational video games Intiñam and Intiñam Trivia by means of a situated analysis of their symbolic, technological, and curricular mediations. This methodological orientation makes it possible to understand the case as a dynamic construction shaped by processes of meaning, institutional practices, and narrative configurations that enable a philosophical reading of the educational phenomenon (Játem-Laguado et al., 2020).

Specifically, the critical-hermeneutic approach integrates two methodological operations: (1) the interpretation of meaning structures present in the video game experience from the perspective of the actors involved,

and (2) the problematization of the normative, curricular, and technological frameworks that condition such experiences. This dual methodological entry point is aligned with the principles of the philosophy of education, which conceives education as a process involving the interpretation of symbols, the critical appropriation of technologies, and situated reflection on the conditions of knowledge (Terrones-Rodríguez, 2017). The case study is delimited by the video games Intiñam and Intiñam Trivia, developed within the framework of the Ecuadorian national curriculum (Ministry of Education, 2016) and implemented by students enrolled in teacher education programs at the National University of Education (UNAE).

From a hermeneutic perspective, the analysis focuses on reconstructing the horizon of meanings that students attribute to the video game experience, which entails attending to the narrative, symbolic, and emotional dimensions that emerge during gameplay. From a critical perspective, the study seeks to identify the institutional, curricular, and cultural conditions that shape this experience and that either enable or constrain forms of knowledge appropriation. The video game thus constitutes a space of intersection between pedagogical design and processes of educational subjectivation, recognizing that teacher education also involves a critical engagement with the media, narratives, and devices that mediate learning (Sebarroja, 2015).

In this context, the video games Intiñam and Intiñam Trivia were designed to integrate content from natural sciences, history, art, geography, mythology, and local environmental issues through a ludic-narrative structure based on decision-making, challenge-solving, and the simulation of educational scenarios. The narrative of the games proposes a progression grounded in the recognition of Ecuadorian territories and cultural contexts, enabling connections between disciplinary knowledge and students' lived realities (Nuñez & Remesal, 2021). In this sense, the object of study extends to the formative experience constructed through their use, taking into account the relationships among curricular content, technological mediation, and pedagogical reflexivity.

The primary data collection instrument was a structured survey, validated through expert judgment and internal consistency analysis (α = 0.89). This survey was administered to 396 students between September and December 2024, after participants had interacted with the video games under faculty supervision. The instrument included a total of 24 items distributed across the four dimensions of the E-MIGA model (Torres-Toukoumidis et al., 2017), as well as an additional set of questions designed to assess the philosophical evaluation of the experience from a transdisciplinary perspective. This final component made it possible to capture students' reflections on the relationships among ethics, nature, technology, and society, in alignment with the principles of the digital humanities. A five-point Likert scale was used as the measurement instrument, facilitating the quantification of participants' levels of agreement or disagreement with various statements related to the ludic-educational experience.

In summary, the methodological procedure was grounded in a philosophically driven analytical process structured in four phases. First, the sample was selected through non-probabilistic purposive sampling, focusing on students enrolled in teacher education programs with an affinity for the use of educational technologies. Second, the selection of video games was based on their transdisciplinary curricular design, aligned with the guidelines of the Ecuadorian Ministry of Education and developed by the educational innovation team at UNAE. Third, the implementation of the video games was carried out under controlled conditions, supported by classroom instructors and subsequently complemented with guidelines for autonomous use at home. Finally, the data analysis was conducted through a quantitative systematization of the E-MIGA model indicators, complemented by a philosophical interpretation that connects the findings with the principles of critical education and complex thinking.

From a transdisciplinary philosophical perspective, these results should be understood as evidence of the potential of the digital humanities to reframe teaching and learning processes in the twenty-first century. The ludic narrative embodies a form of symbolization that articulates knowledge, emotions, and

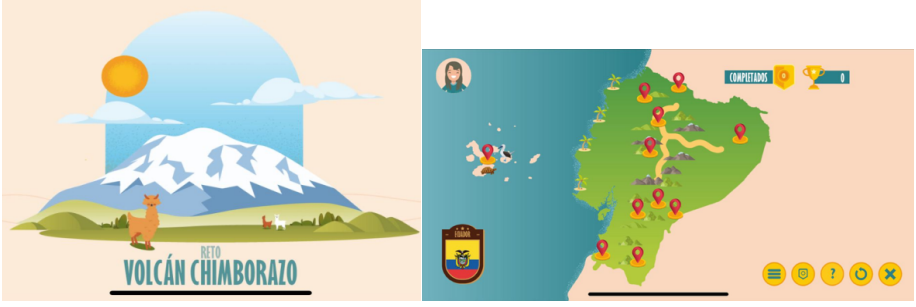
territories. In this sense, the E-MIGA model not only enables the measurement of effectiveness levels but also functions as a hermeneutic device for critically interpreting educational practices mediated by technology. Within this framework, video games are constituted as embodied philosophical practices, where learning is enacted through values, ethical dilemmas, and collective decision-making in response to real-world issues such as climate change.

Results

The educational video games *Intiñam* and *Intiñam Trivia* were developed by a transdisciplinary team of experts in educational innovation and entrepreneurship at UNAE in Ecuador. These games incorporate diverse scenarios, game mechanics, characters, progression systems, interactivity, audiovisual elements, and reward structures (bonuses), all aligned with the curricular elements established by the Ministry of Education at both primary and secondary education levels. Their design is grounded in a transdisciplinary philosophy of education that integrates geography, physics, biology, the arts, history, mythology, and Ecuadorian cultural heritage.

Figure 1.

The educational games Intiñam and Intiñam Trivia as represented in the mobile application



Note. Screenshot of the video games from the UNAE digital repository.

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These educational video games contribute to strengthening learners' skills, digital competencies, critical and reflective thinking, and capacities for resolving socio-environmental conflicts. This is achieved by facilitating interaction with scenarios that simulate the variability of climate change at a global level across diverse intercultural local contexts. Accordingly, in this second phase of the study, the perceptions of 396 UNAE students regarding the video games were analyzed using a five-point Likert scale encompassing the four core dimensions (narrative, emotional, social, and cognitive), in line with the 19 indicators of the E-MIGA model (Integrated Theoretical Model of Gamification in E-Learning Environments) (Torres-Toukoumidis et al., 2017) (see Table 1).

Table 1. *Analysis of the use of educational video games focused on the cognitive dimension of the E-MIGA model*

Dimension	Indicator	Mean Rating (%)
Cognitive	Knowledge acquired	91%
	Understanding of topics	95%
	Application of knowledge	82%
	Information analysis	83%
	Synthesis of theories	79%
	Evaluation of acquired theoretical knowledge	90%

A focused analysis of the cognitive dimension of Intiñam and Intiñam Trivia reveals results that substantiate the effectiveness of these gamified learning tools within the socio-educational context. Specifically, the high mean scores for conceptual understanding (95%) and knowledge acquisition (91%) indicate a sustained and significant improvement in the development of core competencies aligned with the Ecuadorian national curriculum. These findings suggest that educational video games support the effective and durable integration of transdisciplinary knowledge by bridging curricular domains such as the arts, mythology, history, physics, chemistry, biology, and geography. Moreover, they demonstrate that learners are not only able to retain information but also to comprehend key concepts within the broader context of climate change and its localized impacts. In contrast, the indicators related to analysis (83%) and application (82%) point to areas requiring further

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development, particularly in relation to higher-order thinking skills. While the results remain positive, they suggest that students may encounter difficulties when transferring acquired knowledge to novel contexts or when engaging in critical analysis of socio-environmental issues.

Regarding the evaluation (90%) and synthesis (79%) indicators, the findings highlight opportunities for improvement in fostering students' ability to integrate diverse knowledge domains in order to generate innovative solutions. In this sense, video games contribute to strengthening learners' capacity to design value-driven proposals and develop responses to climate change challenges. Overall, the results confirm that *Intiñam and Intiñam Trivia* are highly effective, as they facilitate the integration of curricular knowledge while promoting experiential and meaningful learning. Through a gamified approach, these tools support the development of competencies associated with the digital humanities.

Table 2. *Analysis of the use of educational video games focused on the social dimension of the E-MIGA model*

Dimension	Indicator	Mean Rating (%)
Social	Interaction with the video game	87%
	Commitment to solving challenges	97%
	Collaboration in task completion	84%
	Competition with other players	93%

An analysis of the social dimension (see Table 2) reveals favorable results in terms of enhancing student engagement (97%) and interaction (87%) with educational video games. Overall, the findings indicate that video games promote effective knowledge exchange among students, as game mechanics foster spaces for discussion and the sharing of ideas related to climate change and its global and local impacts. In this regard, these indicators demonstrate that video games maintain learners actively immersed and engaged in the

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proposed activities and content. Additionally, knowledge is reinforced in a contextualized manner, with a focus on developing competencies associated with the digital humanities and environmental education.

Regarding the indicators of competition (93%) and collaboration (84%), the results show that educational video games support cooperative work, collaboration, and knowledge sharing aimed at addressing socio-environmental challenges. In this sense, video games incorporate competitive elements that stimulate student motivation and enhance academic performance. However, it is essential to maintain a balance between collaboration and competition in order to promote meaningful and comprehensive learning.

Table 3. *Analysis of the use of educational video games focused on the emotional dimension of the E-MIGA model*

Dimension	Indicator	Mean Rating (%)
Emotional	Enjoyment of the video game	96%
	Satisfaction with game elements	88%
	Confidence in completing challenges	90%
	Interest in the game	83%
	Creativity developed within the game	91%

An analysis of the emotional dimension (see Table 3) shows significantly positive results, highlighting the enhancement of experience- and emotion-based capacities among students. These indicators demonstrate that gamification enables the creation of motivating and engaging experiences while simultaneously reinforcing theoretical and curricular content aimed at mitigating the effects of climate change both globally and within Ecuador. The high percentages for enjoyment (96%) and satisfaction (88%) indicate that pre-service teachers perceive video games as spaces for generating meaningful learning experiences. Through engagement with socio-environmental challenges embedded within the game, students are encouraged to explore diverse settings such as the Galápagos Islands, coastal regions, the highlands, and the Amazon. Indicators of creativity (91%), confidence (90%), and interest

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(83%) also show positive results, although they present opportunities for further improvement. For some students, these types of video games may generate a degree of uncertainty when confronting the socio-environmental problems presented. At the same time, the findings confirm that video games foster innovative approaches to solving complex problems and support the development of divergent thinking processes.

Table 4. *Analysis of the use of educational video games focused on the narrative dimension of the E-MIGA model*

Dimension	Indicator	Mean Rating (%)
Narrative	Identity formation within the game	95%
	Immersion in the game	87%
	Curiosity about the environments	89%
	Autonomy in solving challenges	84%

Within the narrative dimension (see Table 4), the results indicate that this aspect was engaging, meaningful, and appealing to students. The indicators of immersion (87%) and identity formation (95%) reveal that educational video games foster meaningful connections between students and the characters and roles they assume within the game. This is largely due to the incorporation of geographical, historical, and intercultural elements rooted in the Ecuadorian context. The indicators of autonomy (84%) and curiosity (89%) are also relatively high, reflecting students' identification with the game narrative, which in turn motivates them to explore additional topics presented within the game. This connection is strengthened by the alignment between the game content and students' everyday contexts and local realities. These findings suggest that students experience greater freedom in decision-making when immersed in video game environments. However, further improvements should be considered to strengthen the narrative structure, gameplay options, and the pathways and tasks that students navigate autonomously within the game.

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An analysis of these results leads to the conclusion that gamification—understood as the application of game elements and dynamics in educational contexts to enhance motivation and learning engagement (Deterding et al., 2011)—achieves effective acceptance by incorporating an engaging and contextually grounded narrative within the digital humanities. This approach enables students to strengthen their skills, competencies, and abilities, while also encouraging the development of creative and critical solutions to socio-environmental challenges within the Ecuadorian context. In this regard, elements such as curiosity and identity play a central role in capturing students' attention and sustaining their engagement throughout the learning process, particularly through interaction with the narrative.

Overall, after conducting a comprehensive analysis of the four dimensions of the E-MIGA model, the findings indicate that the 396 university students exhibit a generally positive and inquisitive perception. Accordingly, both educational video games were positively validated, as they enabled the implementation of a transdisciplinary educational philosophy in the teaching of theoretical and curricular content at the EGB (General Basic Education) and BGU (General Unified Baccalaureate) levels. This transdisciplinary educational innovation strategy facilitates the connection between learning experiences and emotions, making them more engaging for learners.

From a hermeneutic perspective, these results invite us to look beyond the numerical indicators that measure pedagogical effectiveness and to delve into the processes of meaning-making through which participants reconstruct their relationship with knowledge. The high valuation of the cognitive and narrative dimensions reflects a genuine symbolic appropriation of the experience, where students recognize in the video game a space of convergence between scientific knowledge and cultural understanding. In this way, quantitative data acquire philosophical depth: they become evidence of an educational process that cultivates both reflection and ethics, demonstrating that learning entails understanding ourselves within a shared web of meanings (Gadamer, 1990; Terrones-Rodríguez, 2017).

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Therefore, it is essential to continue strengthening student engagement and motivation in addressing real-world challenges that affect everyday life. However, improvements should be considered in several immersive elements of the video games, including interest, confidence, synthesis, and the incorporation of additional options that allow students to generate their own ideas. In this regard, *Intiñam* and *Intiñam Trivia* are video games grounded in gamification and a transdisciplinary philosophy of educational innovation, aimed at enhancing competencies associated with the digital humanities within the Ecuadorian educational context. By addressing the areas identified in each dimension, these video games contribute to strengthening knowledge across the experimental, social, artistic, and human sciences from a transdisciplinary perspective.

Conclusions

In an educational context marked by the urgent need to rethink teaching methodologies from a technopedagogical perspective, video games emerge as privileged tools for integrating knowledge, emotion, narrative, and identity. As Latour (2005) suggests, these digital artifacts are not merely mediators but "actants" that redefine learning ecologies, capable of integrating cognitive, affective, and political dimensions within interactive narratives. In this sense, the video games *Intiñam* and *Intiñam Trivia* offer a concrete digital humanities alternative to traditional approaches, enabling playful, situated, and transdisciplinary learning within the classroom.

From this perspective, the analyzed video games embody what Morin (1999) describes as "complex thinking": their ludic design dissolves the boundaries between experimental sciences, social sciences, and humanistic knowledge, as well as between Western logic and ancestral worldviews. Moreover, the simulation of complex socio-environmental systems within these video games transcends a purely didactic function to become a space of ontological experimentation—a laboratory in which students not only learn about the world but also become co-creators of possible realities. In contrast

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to the abstract universalism of global educational platforms, these video games function as situated digital technologies that articulate the official curriculum with local epistemologies, thereby challenging the coloniality embedded in hegemonic instructional design.

Regarding the first specific objective, the study successfully described the operationalization of *Intiñam* and *Intiñam Trivia* through the structuring dimensions of the E-MIGA model. The data revealed a strong performance in the cognitive dimension, with 95% comprehension and 91% knowledge acquisition, demonstrating that learning mediated through ludic environments facilitates both information retention and contextual reinterpretation. These figures indicate that students do not merely reproduce content mechanically, but rather understand it in a situated manner, integrating scientific and cultural knowledge. In the emotional dimension, indicators such as enjoyment (96%) and creativity (91%) reaffirm that motivation functions as a key epistemic driver that directs the learning experience toward action. The social dimension reached outstanding levels of engagement (97%) and interaction (87%), reflecting the role of video games as spaces for encounter, cooperation, and dialogue. Finally, in the narrative dimension, identity projection within the game (95%) and curiosity (89%) consolidate the symbolic role of video games as catalysts for processes of pedagogical subjectivation, allowing students to recognize themselves within the landscapes, dilemmas, and characters presented.

Regarding the second specific objective, the study focused on identifying the relationship between the ludic design of the video games and the curricular content of the Ecuadorian educational system, demonstrating an organic and transdisciplinary integration. *Intiñam* and *Intiñam Trivia* are approached from a postdigital curriculum perspective (Bacalja et al., 2024), which enables a situated reconfiguration of the digital humanities through decisions, challenges, and interactive narratives that foster a direct connection between knowledge and territory. The gamified structure of the content integrates disciplines such as physics, chemistry, biology, geography, history, the arts, and mythology in an interconnected manner, thereby overcoming the fragmentation characteristic

of traditional disciplinary approaches. In this way, the curriculum becomes an experiential process that engages the student as an active subject. This finding is particularly significant, as it demonstrates that gamification functions as a curricular design strategy that redefines knowledge by anchoring it in context, emotion, and action. This transdisciplinary philosophy of educational innovation enables video games to become a pedagogical interface that translates curricular content into critical, creative, relevant, motivating, and ethically challenging reflective inquiries.

The third objective made it possible to analyze the articulations among the symbolic, technological, and philosophical-educational elements of the video game experience, opening a critical interpretation of video games as spaces of epistemic and cultural resistance. Video games emerge as contested terrains where identities, meanings, and forms of knowledge are negotiated. From this perspective, the video games analyzed in this study can be understood as embodied philosophical practices in which knowledge remains dynamic and alive. More specifically, drawing on Merleau-Ponty's phenomenology (2007) and contemporary approaches to lived education (van Manen, 1990), the video games examined in this study are understood as embodied philosophical practices in which knowledge emerges through students' perceptual, emotional, and reflective experiences. Each interaction within the video game environment constitutes an act of understanding—a process in which body, thought, and affect converge to shape situated forms of learning. In this sense, the educational experience acquires vitality, as knowledge manifests through action, interpretation, and the transformation of one's horizon of meaning.

The student experience is configured as a symbolic journey in which ancestral narratives, environmental challenges, ethical decisions, and scientific knowledge intersect. Within this intersection, technology ceases to function as a purely instrumental medium and becomes a pedagogical territory of the digital humanities. Students not only solve challenges but also reflect on their place in the world, their relationship with the environment, and their capacity to act within it. The game narrative, rooted in Ecuadorian contexts, fosters immersion and encourages a critical reappropriation of territory, history, and culture.

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Despite the positive results obtained, the study presents important limitations. The sample is restricted to a single teacher education institution, limiting the generalizability of the findings to other educational levels or contexts. Additionally, the structured nature of the survey instrument constrains the exploration of deeper and more subjective dimensions of the video game experience. Although the E-MIGA model enables an integrated analysis of cognitive, emotional, social, and narrative dimensions, it does not fully capture the tensions, resistances, or reinterpretations that emerge during interaction processes. Furthermore, the study does not adopt a longitudinal perspective that would allow for the evaluation of the sustained impact of video games on the professional development of future teachers or on their subsequent implementation in real educational settings.

In light of these limitations, it is recommended to expand the scope of future research to include other educational institutions, particularly those located in rural areas or serving Indigenous populations, in order to assess the intercultural relevance of these video games. Likewise, future studies could incorporate more immersive qualitative methodologies—such as in-depth interviews or gameplay interaction analysis—to access students' micro-experiences, emotions, and personal narratives. In this regard, the proposed video games embody the principles of Southern digital humanities and demonstrate the use of technology as a tool for thinking, feeling, and acting in transformative ways within the world.

In summary, this research confirms that educational video games designed from a transdisciplinary, contextualized, and ethically informed perspective enrich learning processes and contribute to the development of a situated technopolitical pedagogy. Teaching and playing thus intertwine as forms of cultural resistance, meaning-making, and transformative agency. Finally, policymakers are urged to consider these experiences as inputs for the development of guidelines that promote the creation of educational video games grounded in critical, inclusive, and culturally situated pedagogical frameworks—ones that respond to Ecuador's specific needs rather than uncritically adopting models imported from the Global North.

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Author Contributions

Javier Collado Ruano led the conceptualization, methodology, formal analysis, investigation, original draft writing, validation, and visualization. Alicia Gabriela Paredes Benavides contributed to data curation, investigation, validation, writing, review, and editing. Ángel Torres Toukoumidis contributed to conceptualization, supervision, project administration, resources, software, and writing, review, and editing.

Conflict of Interest

The authors declare no conflict of interest with any institution or organization of any kind. Likewise, Universidad Católica Luis Amigó assumes no responsibility for the management of copyright by the authors in their articles; therefore, the accuracy and completeness of citations and references are the sole responsibility of the authors.

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