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ESTRATEGIAS, METODOLOGÍAS & DIDÁCTICAS EDUCATIVAS

Gamification, AI and arts as teaching tools in the 21st century.

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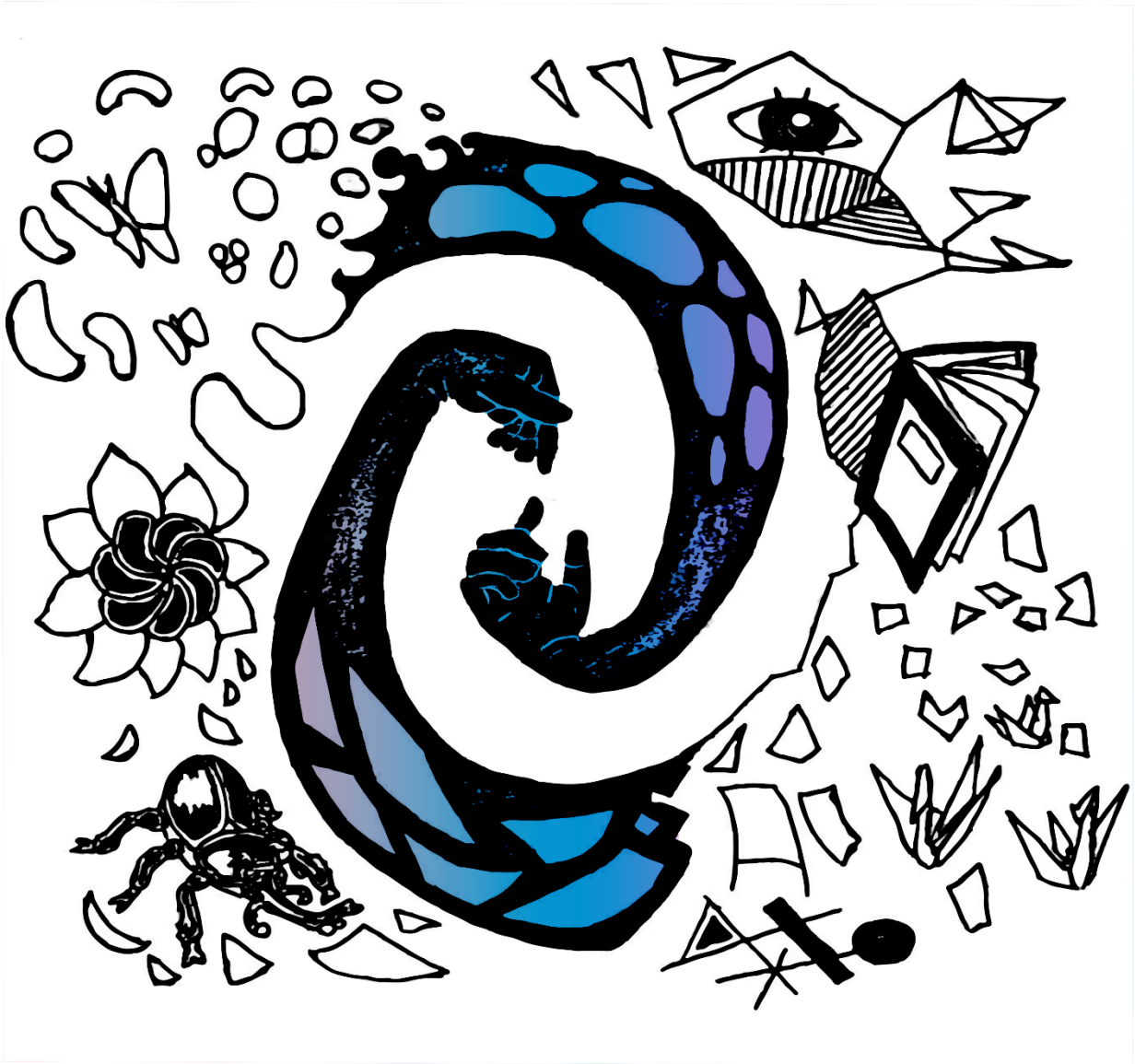

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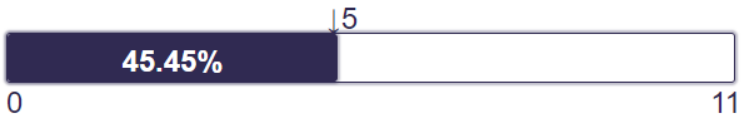

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ABOUT THIS NUMBER

Sobre este número

This issue has received manuscripts of great scope/usefulness for the development of teaching practices across numerous disciplines and for different levels of education. The selected manuscripts promote technological innovation in classrooms and highlight the role of the teacher as a mediator and agent of change, emphasizing the acquisition of 21st-century digital skills. Its main objective is to share innovative approaches and methodologies with the educational community, tailored to the profile and experience of each teacher, to ensure sustainable learning for students.

Moreover, through these works, the authors also foresee the future of technology-supported education, making it clear that the integration of technological innovations such as artificial intelligence, should not be perceived as a teacher replacement, but as powerful tool that enhances and transforms the educational process. Overall, it is analyzed by the authors how the adaptability of teachers to the digital age has redefined the concept of the traditional classroom and has paved the way for a more dynamic, student-centered education, positively transforming the educational scenery.

El presente número ha recibido manuscritos de gran alcance/utilidad para el desarrollo de la práctica docente en diversas disciplinas y para diferentes niveles de educación, siendo seleccionados aquellos que promueven la innovación tecnológica en las aulas y destacan el rol del docente como agente mediador y de cambio, haciendo énfasis en la adquisición de destrezas digitales del siglo XXI. Su objetivo principal es compartir con la comunidad educativa enfoques y metodologías innovadoras, adaptadas al perfil y experiencia de cada docente, para garantizar un aprendizaje sostenible en los estudiantes.

Además, a través de estos trabajos los autores imaginan también el futuro de la educación apoyada en la tecnología, dejando en claro que la integración de las innovaciones tecnológicas como la inteligencia artificial, por ejemplo, no debe ser percibida como un reemplazo del docente, sino como poderosas herramientas que enriquecen y transforman el proceso educativo. En general, se analiza como la adaptabilidad del docente a la era digital ha redefinido el concepto del aula tradicional y ha abierto el camino a una educación más dinámica y centrada en el alumno, transformando positivamente el paisaje educativo.

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(fr) Ce numéro a reçu des manuscrits d'une grande portée/utilité pour le développement de la pratique enseignante dans diverses disciplines et pour différents niveaux d'éducation, ayant été retenus ceux qui promeuvent l'innovation technologique dans les salles de classe et mettent en avant le rôle de l'enseignant en tant qu'agent médiateur et de changement, en mettant l'accent sur l'acquisition des compétences numériques du XXIe siècle. Son objectif principal est de partager avec la communauté éducative des approches et des méthodologies innovantes, adaptées au profil et à l'expérience de chaque enseignant, pour garantir un apprentissage durable chez les élèves.

De plus, par le biais de ces travaux, les auteurs envisagent également l'avenir de l'éducation assistée par la technologie, en soulignant que l'intégration d'innovations technologiques telles que l'intelligence artificielle, pour en mentionner une, ne doit pas être perçue comme un remplacement du professeur, mais comme des outils puissants qui enrichissent et transforment le processus éducatif. Dans l'ensemble, les auteurs analysent comment l'adaptabilité des enseignants à l'ère numérique a redéfini le concept de la salle de classe traditionnelle et a ouvert la voie à une éducation plus dynamique et centrée sur l'élève, transformant positivement le paysage éducatif.

(port) O presente número apresenta manuscritos de significativa relevância para o desenvolvimento da prática docente em diversas disciplinas e para diferentes níveis de educação, sendo selecionados aqueles que promovem a inovação tecnológica nas aulas e destacam o papel do docente como agente mediador e de mudança, com ênfase na aquisição de habilidades digitais do século XXI. O objetivo principal desta edição é compartilhar com a comunidade educativa abordagens e metodologias inovadoras, adaptadas ao perfil e à experiência de cada docente, para garantir uma aprendizagem sustentável nos estudantes.

Além disso, por meio desses trabalhos, os autores também imaginam o futuro da educação apoiada na tecnologia, destacando que a integração de inovações tecnológicas, como a inteligência artificial, não deve ser vista como um substituto do docente, mas como ferramentas poderosas que enriquecem e transformam o processo educativo. Em geral, os autores analisam como a adaptabilidade do docente à era digital redefiniu o conceito de aula tradicional, abrindo caminho para uma educação mais dinâmica e centrada no aluno, transformando positivamente o panorama educacional.

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YUYAY
ESTRATEGIAS, METODOLOGÍAS & DIDÁCTICAS EDUCATIVAS

Gamification and arts in the teaching of a foreign language in the 21st century.

(es) **La gamificación y el arte en la enseñanza de una lengua extranjera en el siglo XXI.**
(fr) **La ludification et l'art dans l'enseignement d'une langue étrangère au XXIe siècle**
(port) **Gamificação e artes no ensino de uma língua estrangeira no século 21.**
(it) **La ludicizzazione e l'arte nell'insegnamento di una lingua straniera nel XXI secolo**

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Abstract (en)

This work analyzes the crucial role of technology and innovation in contemporary education, focusing on foreign language teaching. It addresses the pressing need to incorporate technological tools in educational environments to adapt to a globalized and technologically advanced society. The challenges faced by educators in the current era are discussed, highlighting the importance of an adaptive and personalized pedagogical approach. Furthermore, it examines how innovation in education, including digital technology and gamification, can substantially enhance teaching and learning processes. The relevance of personalized learning, the strategic use of digital tools, and the creation of collaborative and flexible educational environments are emphasized. Additionally, the positive impact of gamification on student motivation and engagement, as well as on the development of linguistic and social skills, is underscored.

The role of arts in foreign language teaching is also emphasized, highlighting its ability to enrich the educational experience and promote deeper and more meaningful learning. Various ways in which art can be integrated into the classroom to stimulate creativity, personal expression, and cultural understanding are described. Finally, the future of teaching is reflected upon, exploring the potential of artificial intelligence (AI) to enhance personalized learning and provide intelligent support to students and educators. The possibility of full integration of technology in teaching is raised, although it is acknowledged that its complete impact is yet to be determined.

Keywords: Technological innovations, gamification, foreign languages, sustainable learning.

Resumen

Este trabajo analiza el papel crucial de la tecnología y la innovación en la educación contemporánea centrándose en la enseñanza de idiomas extranjeros. Se aborda la necesidad apremiante de incorporar herramientas tecnológicas en entornos educativos para adaptarse a una sociedad globalizada y tecnológicamente avanzada. Se discuten los desafíos que enfrentan los educadores en la era actual, destacando la importancia de un enfoque pedagógico adaptativo y personalizado. Por otra parte, se analiza cómo la innovación en la educación; incluida la tecnología digital y la gamificación, puede mejorar sustancialmente los procesos de enseñanza y aprendizaje. Se enfatiza la relevancia de la personalización del aprendizaje, el uso estratégico de herramientas digitales y la creación de entornos educativos colaborativos y flexibles. Además, se examina el impacto positivo de la gamificación en la motivación y el compromiso de los estudiantes, así como en el desarrollo de habilidades lingüísticas y sociales.

Se subraya el papel del arte en la enseñanza de idiomas extranjeros, destacando su capacidad para enriquecer la experiencia educativa y promover un aprendizaje más profundo y significativo. Se describen varias formas en que el arte puede integrarse en el aula para estimular la creatividad, la expresión personal y la comprensión cultural. Por último, se reflexiona sobre el futuro de la enseñanza, explorando el potencial de la

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inteligencia artificial (IA) para mejorar la personalización del aprendizaje y brindar apoyo inteligente a estudiantes y educadores. Se plantea la posibilidad de una integración total de la tecnología en la enseñanza, aunque se reconoce que su impacto completo aún está por determinarse.

Palabras claves: innovaciones tecnológicas, gamificación, lenguas extranjeras, aprendizaje sostenible.

Resumo

Este documento analisa o papel crucial da tecnologia e da inovação na educação contemporânea, com foco no ensino de línguas estrangeiras. Aborda a necessidade de incorporar ferramentas tecnológicas em ambientes educacionais para se adaptar a uma sociedade globalizada e tecnologicamente avançada. Discute os desafios enfrentados pelos educadores na era atual, destacando a importância de uma abordagem pedagógica adaptativa e personalizada. Além disso, considera como a inovação na educação, incluindo a tecnologia digital e a gamificação, pode melhorar substancialmente os processos de ensino e aprendizagem. Enfatiza a relevância da personalização da aprendizagem, o uso estratégico de ferramentas digitais e a criação de ambientes educacionais colaborativos e flexíveis. Também examina o impacto positivo da gamificação na motivação e no engajamento dos estudantes, bem como no desenvolvimento de habilidades linguísticas e sociais.

Também destaca o papel da arte no ensino de línguas estrangeiras, enfatizando sua capacidade de enriquecer a experiência educacional e promover uma aprendizagem mais profunda e significativa. Descreve diversas formas pelas quais a arte pode ser integrada à sala de aula para estimular a criatividade, a expressão pessoal e a compreensão cultural. Por fim, gera uma reflexão sobre o futuro do ensino, explorando o potencial da inteligência artificial (IA) para aprimorar a personalização da aprendizagem e fornecer suporte inteligente a estudantes e educadores. A possibilidade de uma integração total da tecnologia no ensino é questionada, embora se reconheça que seu impacto completo ainda esteja por determinar.

Palavras-chave: Inovações tecnológicas, gamificação, línguas estrangeiras, aprendizagem sustentável.

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Contextualization

Technology is present everywhere; the use of technological tools in the teaching-learning process has become a sine qua non[1] condition to dynamize the classroom and ensure sustainable learning, a frequent discussion among educators in the 21st century. We live and operate in a globalized and technified society; therefore, we are committed to integrating multiple innovative resources to achieve the objectives set in the different spheres we navigate. In the workplace, technology has been essential to overcome borders and shorten both distances and language barriers. Academically, technology opens up endless possibilities as a tool for teaching, reviewing content, tutoring, and providing feedback to students.

The education standards in the 21st century, according to the disclosures made by the UN and UNESCO in the plans towards Agenda 2030 (de Santiago, 2020), require teachers to be resilient, responsive -innovative, communicative, inclusive, observant, empathetic, and attentive-and promoters of inclusive innovation. Often, teachers face challenges such as highly heterogeneous classes, students more inclined towards technology, learners with special educational needs (SEN) - whether associated with a disability or not -, and the wide range of post-pandemic study modalities. This has pushed teachers to embrace innovation and foster a learning environment adapted to the individual needs of each student.

In the field of teaching foreign languages, technology is even more relevant as a mediator of knowledge, and its use in various educational products has created a bridge towards democratization. A tangible example of this is the use of Learning Management Systems (LMS), a tool frequently used in educational institutions nowadays. Furthermore, thanks to technology, it has been possible to integrate playful resources or tools that stimulate learners' creativity, such as gamification and the arts. However, to what extent should we include technology and technological innovations in our teaching practice? Can we consider technology as a true ally in the process of teaching a foreign language?

Development

Educational innovation has been vital in adapting teaching processes to current and future demands. Society is rapidly transforming, and education must be able to prepare students to face the challenges that will arise in the future. Moreover, innovation fosters creativity, critical thinking, and student motivation, which are key aspects for meaningful and effective learning. Likewise, the implementation of innovations in education allows for the customization of the teaching process, addressing the individual needs of each student.

[1] Latin expression generally associated with the notion of [condition] that is absolutely necessary or indispensable for something else to happen or be carried out.

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With technological advancements and the incorporation of digital tools, more possibilities are opening up to explore and improve the way we teach and learn. For example, the use of virtual platforms, mobile applications, and online resources expand access to information and provide the opportunity to engage in interactive activities. This gives students greater autonomy in their learning process and enables them to acquire fundamental digital skills in today's society.

On the other hand, the integration of collaborative projects and interaction with people from different cultures and countries thanks to global connectivity, promote the development of social and emotional competencies. Therefore, "it is important for educational institutions to design strategies and programs that promote the development of digital competencies among students, integrating the use of ICT (Information and Communication Technologies) across the curriculum" (Olmedo et al., 2021, p. 164).

Flexible and multifunctional environments allow for adaptation to different types of activities and facilitate collaboration and exchange among students. Additionally, the digitization of educational resources and the use of virtual reality (VR) and augmented reality (AR) tools enrich the learning experience, making it more immersive and engaging. In summary, innovation in education is essential to prepare students comprehensively and offer them the best opportunities for their academic and personal development.

With the strategic use of technology and the inexhaustible creativity of educators, it is possible to transform the way teaching and learning are conducted, promoting more meaningful learning adapted to the needs and realities of the 21st century (Seufert et al., 2021). Currently, technological innovations have had a significant impact on education, facilitating access to resources and tools that enrich teaching and learning processes (Szymkowiak et al., 2021). These innovations encompass various areas, such as the use of mobile devices in the classroom, digital learning platforms, virtual and augmented reality, as well as artificial intelligence.

These technologies offer new possibilities to create more dynamic and personalized educational environments, fostering student participation and engagement. Additionally, new trends have emerged in the educational field, such as online learning, gamification, and the use of data and analytics to inform pedagogical decision-making. These trends are transforming the way students learn and professors teach, allowing for the adaptation of the educational process to the individual needs of each student. Similarly, technological innovations are breaking geographical barriers and providing access to education to those who might otherwise not have access. Through online learning platforms and digital resources, anyone with internet access can learn and improve their skills and knowledge, regardless of their location or economic situation.

The use of mobile devices in the classroom has become a common practice in many educational institutions worldwide. These devices, such as smartphones and tablets, provide students with the facility to access online information quickly and easily, allowing them to conduct research and collaborate effectively with their peers on various academic projects. At the same time, through a wide variety of specific educational

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applications, teachers have the opportunity to create interactive activities and personalized assessments to further enrich the teaching and learning process in the classroom.

These applications enable students to actively engage in their own education, as they can access supplementary study material, take knowledge tests, and participate in practical learning activities. However, despite the evident benefits that mobile devices can bring to the educational environment, it is essential to establish clear and specific guidelines regarding their responsible use. The rules should include aspects such as the allowed time for device usage during classes, the prohibition of access to certain non-educational websites or applications, and the need to maintain an environment of respect and concentration during school activities.

These guidelines play a pivotal role in creating an appropriate learning environment, as they ensure that mobile devices are used effectively and do not become a distraction for students. In this way, educators can make the most of the available technological tools to improve the teaching process and prepare students for the digital world we live in, providing them with the necessary tools to succeed in their studies and future careers (Kipper et al., 2021).

Digital learning platforms have completely revolutionized how students can access a wide variety of educational materials and engage in numerous learning activities. There is no doubt that these platforms are an invaluable tool in the world of education. One of the most prominent features of these platforms is their interactive content. Through videos, exercises, and interactive assessments, students can fully immerse themselves in their learning process. These tools precisely adapt to the individual needs of students, ensuring a personalized and effective educational experience.

Graham and Longchamps (2022) emphasize the following:

> It is of paramount importance to include a variety of experiences and learning situations to truly engage students in interacting with teaching materials and acquired concepts through interaction and collaborative participation. This is why sustainable active learning depends on an inclusive, varied, flexible, innovative, and enriching pedagogical approach. (p. 10)

The fourth industrial revolution (4IR), a term coined to describe the technological advancement and its boom in the 21st century, has changed the traditional paradigm of behaviorist education, making it more dynamic, engaging, and immediate, and giving greater prominence to the student.

Haleem et al., (2022) state the following:

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> Traditional classroom instructions fail to provide an immediate learning environment, quicker assessments, and increased engagement. In contrast, digital learning tools and technology fill this gap. Some of the efficiencies that such technologies provide are simply unparalleled to traditional learning methodologies. With smartphones and other wireless technology devices becoming popular among the general public, it makes sense for schools and educational institutions to make efficient use of them by incorporating technology into the classroom. In fact, the adaptability and non-intrusive nature of current technology make learning more appealing to the next generation (p. 275).

If we focus our analysis on higher education, the classical model limits the interaction among the three main actors in the educational equation: students, professors, and content. It is here that technological innovations in teaching change the landscape; gamification, for example, emerged as a playful tool that allows teaching content and motivates students to participate actively. Graham and Longchamps (2022, as cited in Forbes et al., 2023) assert that "motivation and stimulation are powerful forces."

From the educators' perspective, they have a divided perception; on one hand, they recognize the benefits of gamification as a highly positive strategy to facilitate learning, but at the same time, they emphasize the effort required to prepare gamified lesson sequences (González & Pujolà, 2021).

Gamification refers to the use of game elements and techniques in non-game contexts, such as language teaching. It involves applying game mechanics like challenges, rewards, and competition to motivate and stimulate active student participation. Through gamification, the learning process becomes tremendously fun, exciting, and engaging, thereby facilitating the acquisition of knowledge and skills more effectively and efficiently. However, it is important to emphasize that gamification isn't just about turning educational activities into games; it is about strategically and intentionally using playful elements to enhance and substantially improve student learning. Its impact on the educational landscape has been so significant that more and more institutions and teachers are adopting this innovative and revolutionary methodology for teaching various subjects. Oliva (2017, as cited in Corchuelo-Rodriguez, 2018) agrees with other authors that gamification in the university context presents an opportunity to motivate, improve group dynamics, attention, reflective criticism, and meaningful learning for students.

Applied to foreign languages teaching, gamification brings numerous benefits for learners. Through the playful elements it introduces such as challenges and rewards, it enhances memorization and assimilation of knowledge, fosters communicative skills, and promotes both collaboration and collective effort. Students are motivated to actively participate, take on challenges, and overcome obstacles, experiencing a sense of achievement and satisfaction as they progress through the game. This tool also provides an interactive and enjoyable environment that facilitates the learning process, allowing students to actively experience and practice the foreign language in real situations while fostering friendly competition among them. Zhang and Chen (2021) found that gamification can have positive effects on reducing anxiety in learning a foreign language among

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Chinese university students, suggesting that this approach can be beneficial for enhancing the learning experience and academic performance in language teaching contexts.

All these activities culminate in an increase in student performance and their individual or collaborative participation in the classroom. Overall, gamification is an effective strategy to make learning a foreign language more dynamic, effective, and long-lasting. By using techniques such as repetition, immediate feedback, and positive reinforcement, the neural connections related to acquiring language skills are strengthened. Students have the opportunity to practice consistently and meaningfully, enabling them to consolidate the concepts and vocabulary acquired. Additionally, when facing challenges and solving problems through gameplay, students develop critical thinking and creativity skills, enhance their attention span, concentration, and boost their ability to retain and apply knowledge in different contexts. Another significant advantage of gamification in foreign language teaching is its ability to personalize learning according to the individual needs and preferences of each student. By adapting games and activities to different levels of language proficiency, students can progress at their own pace and feel appropriately challenged.

On the other hand, it is important to highlight the versatility offered by technology, technological innovations, and their applications, as they allow us to integrate knowledge across disciplines using concepts that align with intrinsic elements of foreign language learning, such as culture and, by extension, art. Learning a language through the arts has a significant impact on achieving sustainable learning, as it creates an enriching and motivating environment that promotes deeper and lasting learning, enhances students' confidence, and fluency in the language. For example, as noted by Rocha Bernal, Valbuena-García, and Castillo (2024), teaching through the arts promotes creativity, personal expression, and the use of the English language.

However, art does not always aim to enhance artistic creation per se but rather enrich students' education through artistic means. Art can often be seen as a "pedagogical value," as expressed by Eraso (2015, as cited in Rocha and Chávez, 2022), which is employed to stimulate the exploration of concepts, achieve goals, carry out projects, and encourage different forms of expression in any educational setting. Through the arts, creativity and innovative thinking are fostered, skills increasingly demanded in today's job market. Additionally, arts education promotes personal expression, allowing students to explore and share their emotions, thoughts, and viewpoints through various artistic forms. It also stimulates critical thinking by inviting students to analyze and reflect on works of art, thereby fostering their analytical and reasoning abilities (Gutierrez-Cassagnne et al., 2023).

Integrating different forms of art into foreign language teaching enriches learning and promotes a comprehensive educational experience, stimulating the creative process, personal expression, and connecting learners with culture, the essence of their people, and thus the target language. To implement art in the classroom, it is necessary to consider the context and level of the students, as well as select appropriate strategies and resources. Art becomes the catalyst that drives and enhances gamification in the educational

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sphere, adding magic and charm to the learning experience. Through its multiple forms of expression, art allows students to explore new dimensions, connect with their creativity, and enjoy the process of acquiring knowledge in an enriching and stimulating environment. The use of art in foreign language teaching not only improves the experience but also awakens a passion for learning and develops a true connection with the language and its culture. (Hernando, 2023)

For example, music, plays, films, and other artistic expressions allow students to explore the language in a more authentic and meaningful way. These different forms of art offer real and vibrant cultural contexts, facilitating a deeper and more contextualized understanding of the foreign language. Moreover, art also promotes empathy by allowing students to put themselves in the shoes of characters or artists, understanding their perspectives and emotions. This cultural understanding and empathy are essential for effective communication and harmonious coexistence in an increasingly globalized world.

At the University of the Arts (Guayaquil, Ecuador), the Department of Foreign Languages engages in work based on the "actional perspective"[2] integrating art into the language learning process. Our methodology is supported by the concept of Blended-Learning, wherein students reinforce their knowledge and develop skills within the Moodle platform through various interactive activities that merge artistic themes with foreign languages.

[2] The actional perspective is a methodological approach in which the ultimate goal is for the student to perform an action or task. To accomplish this action, the learner uses language and communication to achieve the requested objective.

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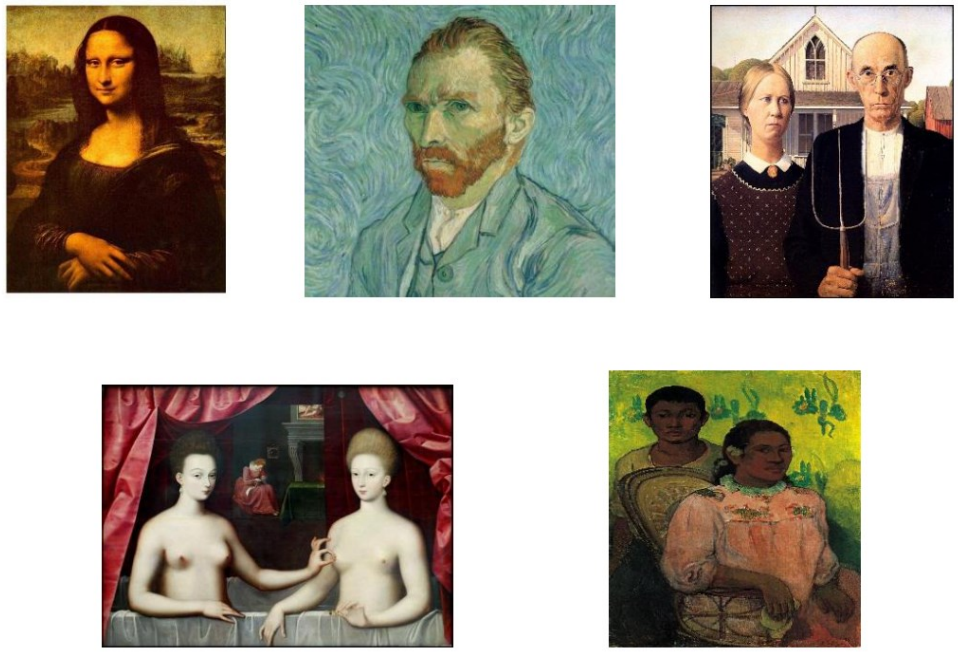
Figure 1

Regardez le générique de la vidéo sans son. Identifiez les tableaux suivants :



Précisez dans quelles périodes ils ont été peints et par qui.

Source: Own creation (2024).
Note: Didactization of an authentic document - video from FRANCE 2 broadcast "D'art d'art," about the painting *"La Liberté guidant le peuple"* by the Romantic painter Eugène Delacroix, uploaded to the Moodle platform using the H5P tool.

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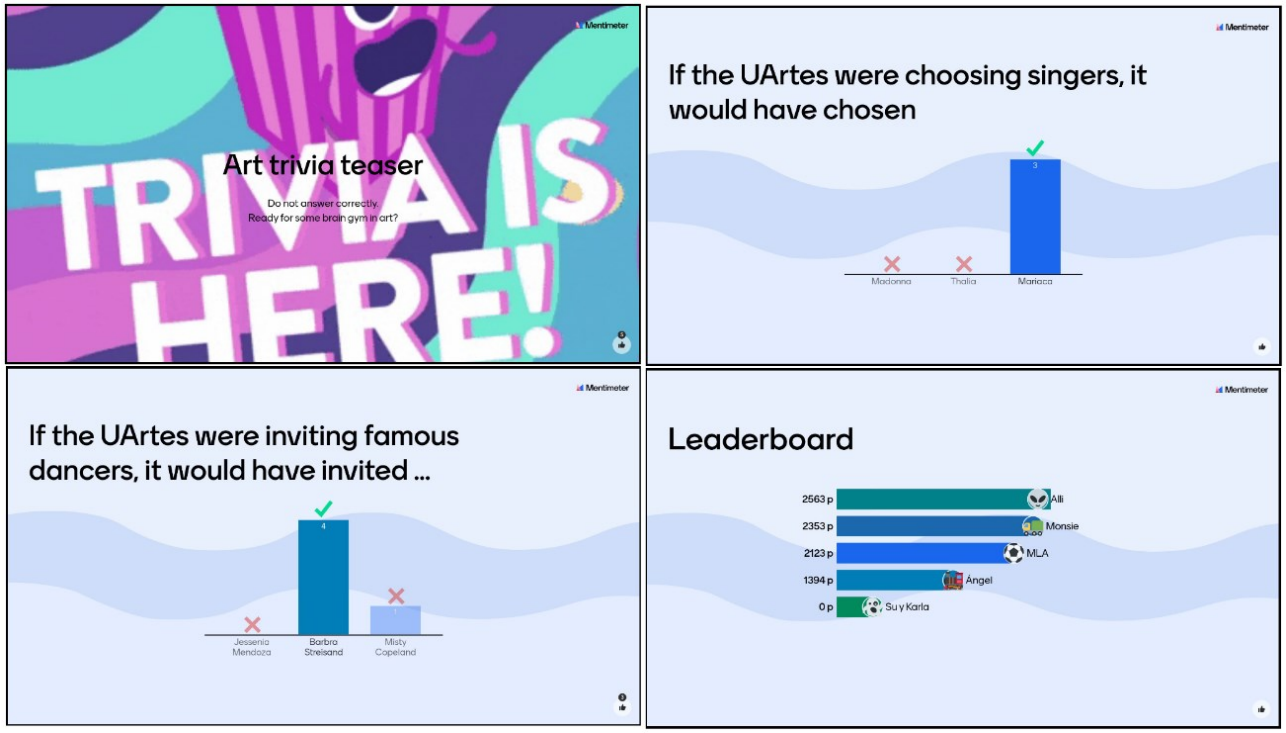
Similarly, within the classroom, teachers incorporate gamification tools to achieve the set objectives in their lessons in a participatory and playful manner. Frequently used applications to reinforce lexical and grammatical content within the teaching-learning process include: Quizziz, Kahoot, Plickers, Socrative, Mentimeter, Blooket, Factile, etc. The use of these playful elements has sparked interest among the student community and has helped foster interactive, communicative, cooperative, and sustainable learning. The acceptance of this methodology has been reflected upon professors' evaluations, positive feedback from students, and suggestions to include more activities of this nature in both face-to-face and virtual sessions. As Pham and Pham (2022) argue, "teaching and learning become a more collaborative and enjoyable process when game-based components are incorporated. The goal of using the concept of gamification in education is to maximize student motivation and engagement." (p. 263)

Figure 2



Source: Tapia, J. (2024).

Note: Ludic activity to discover the use of the mixed conditional in hypothetical situations. Input created by teacher Joan Tapia Escobar using the app Mentimeter.

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Being the first public university in Ecuador devoted to training professionals in different artistic disciplines, we strive to provide a comprehensive and sustainable education to our student body. Therefore, it is essential for us to integrate the use of technological tools and active methodologies, as these allow students to explore and improve their creativity, thus fostering the ability to think innovatively and outside the conventional. Additionally, critical thinking becomes a fundamental pillar, as students learn to analyze information rigorously and question the established norms. Problem-solving becomes an essential skill, as students learn to identify obstacles and find efficient solutions. We are aware that in the current global context, it is crucial for students to acquire and develop 21st-century skills such as digital literacy which will prepare them for success.

Conclusions

In conclusion, technological innovations are revolutionizing education by expanding access to enriching resources and tools, personalizing the learning process, enabling new forms of teaching and learning, and driving educational inclusion by breaking geographic and economic barriers. These technologies continue to evolve and transform the educational world, providing an increasingly tailored learning environment to individual needs and enabling quality education without limits of time or space.

In our teaching practice, within the Department of Foreign Languages at the University of the Arts, both art and gamification have proven to be effective tools in teaching a foreign language to achieve sustainable learning in the 21st century. Gamification motivates and engages students, improves knowledge retention, and develops cognitive and social skills. On the other hand, art stimulates creativity and personal expression, fosters cultural appreciation and empathy, and integrates different art forms into the teaching process. Both methodologies and strategies can be implemented through playful and creative activities, digital platforms, and artistic projects in the foreign language curriculum. Assessment and monitoring of learning, as well as the study of cases and practical experiences, are fundamental to ensure an effective educational process. In summary, combining art and gamification in teaching a foreign language allows for a comprehensive and enriching approach that enhances student learning.

Indeed, in a constantly changing world where today's technology becomes obsolete tomorrow, we wonder if the future of teaching lies in artificial intelligence. Artificial intelligence (AI) has come to transform and revolutionize the educational field in an unprecedented way. It is an essential tool that can provide intelligent and effective support to both students and educators, elevating the quality of teaching to unforeseen levels. AI-based virtual tutoring systems are capable of adapting precisely and surprisingly to the individual needs of each student, thus achieving a much more efficient and personalized teaching process than anyone could have ever predicted. On the other hand, AI-driven educational chatbots have evolved remarkably and can now instantly respond to students' questions with little to no margin of error, providing high-quality real-time assistance that makes students feel like they have an expert by their side at all times. Only time will tell if in ten years, teaching will be completely delivered with, by, and through technology and its innovations.

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References

Corchuelo-Rodriguez, C. A. (2018). Gamificación en educación superior: experiencia innovadora para motivar estudiantes y dinamizar contenidos en el aula. *Edutec. Revista Electrónica de Tecnología Educativa*, *0*(63), 29-41 (380). https://doi.org/10.21556/edutec.2018.63.927

de Santiago, O. (2020). La educación en tiempos de la pandemia de COVID-19. *Santiago: CEPAL-UNESCO*.

Forbes, D., Gedera, D., Hartnett, M., Datt, A., & Brown, C. (2023). Sustainable Strategies for Teaching and Learning Online. Sustainability 2023, Vol. 15, Page 13118, 15(17), 13118. https://doi.org/10.3390/SU151713118

González, M. V., & Pujolà, J. T. (2021). Del juego a la gamificación: Una exploración de las experiencias lúdicas de profesores de lenguas extranjeras. In Francisco Javier Hinojo Lucena, Salvador Mateo Arias Romero, María Natalia Campos Soto & Santiago Pozo Sánchez (eds.), *Innovación e investigación educativa para la formación docente*,398–412. Madrid: Dykinson. https://doi.org/10.2307/j.ctv2gz3t2s.36

Graham, C., & Longchamps, P. (2022). Transformative Education: A Showcase of Sustainable and Integrative Active Learning; Routledge: London,UK. https://doi.org/10.4324/9781003276203.

Gutierrez-Cassagnne, S., Vallejo-Piza, G., & Almao-Malvacias, V. (2023). El Arte y su Influencia en los Procesos de Aprendizaje de los Estudiantes del Instituto Tecnológico Universitario Euroamericano. 593 Digital Publisher CEIT, 8(6), 131-142. https://doi.org/10.33386/593dp.2023.6.1624

Haleem, A., Javaid, M., Qadri, M. A., & Suman, R. (2022). Understanding the role of digital technologies in education: A review. *Sustainable Operations and Computers*, *3*, 275–285. https://doi.org/10.1016/J.SUSOC.2022.05.004

Hernando, R. C. (2023). Guernica, arte hecho símbolo. Un breakout educativo digital para el aula de ELE. PARTE 1. CREATIVIDAD Y MOTIVACIÓN. cervantes.es

Kipper, L., Iespen, S., Forno, A., Frozza, R., Bertolin Furstenau, L., Agnes, J., & Cossul, D. (2021). Scientific mapping to identify competencies required by industry 4.0. Technology in Society. 64. 101454. https://doi.org/10.1016/j.techsoc.2020.101454

Olmedo, E. O., Vázquez-Cano, E., Arias-Sánchez, S., & López-Meneses, E. (2021). Competences in the use of information technologies and communication in university students. *Pixel-Bit, Revista de Medios y Educacion*, 60, 153–167. https://doi.org/10.12795/pixelbit.74860

Pham, A. T. V., & Pham, C. M. (2022). Teachers' perceptions towards using gamification in teaching grammar for non-English majored students. In Proceedings of the 2022 13th International Conference on E-Education, E-Business, E-Management, and E-Learning (IC4E '22) (pp. 261–265). Association for Computing Machinery. https://doi.org/10.1145/3514262.3514295

Rocha Bernal, N., Valbuena-García, L., Castillo, R. (2024). Arts-Based Teaching in E.L.T.: A Review of Concepts and a Proposal of Integration. *Zona Próxima*, 40, 171-193. https://doi.org/10.14482/zp.40.825.478

Revista YUYAY, Estrategias, Metodologías & Didácticas Educativas ISSN: 2953-6685 e-ISSN: 2953-6677

Rocha, J. J., & Chávez, G. (2022). El currículo y sus desafíos a nivel metodológico, de la teoría a la praxis y de los contenidos a la centralidad del ser humano. Una propuesta desde las artes. In Marcela Barreiro Moreira, Jefferson Cabrera Amaiquema, Geovanny Chávez Matute, Luis D'aubeterre, Lisbeth Dávila, Johnny Guerra Flores, Elena Gui, Alexander Mansutti-Rodríguez, Juan José Rocha, Rosario Saona, Janina Suárez Pinzón & Jorge Tigrero Vaca. *Entre la pedagogía y las artes: Reflexiones sobre la educación en artes, 81-97.*

Seufert, S., Guggemos, J., & Sailer, M. (2020). *Technology-related knowledge, skills, and attitudes of pre-and in-service teachers: The current situation and emerging trends*. https://doi.org/10.1016/j.chb.2020.106552

Szymkowiak, A., Melović, B., Dabić, M., Jeganathan, K., & Kundi, G. S. (2021). Information technology and Gen Z: The role of teachers, the internet, and technology in the education of young people. *Technology in Society*, *65*. https://doi.org/10.1016/J.TECHSOC.2021.101565

Zhang, L., & Chen, Y. (2021). Examining the Effects of Gamification on Chinese College Students' Foreign Language Anxiety: A Preliminary Exploration. In Proceedings of the 2021 4th International Conference on Big Data and Education (ICBDE '21) (pp. 1–5). *Association for Computing Machinery*. https://doi.org/10.1145/3451400.3451401

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Transformation and Challenges Of Higher Education in the Digital Age: strategies for skill development in the 21st century.

(es) **Transformación y Desafíos de la Educación Superior en la Era Digital: Estrategias para el desarrollo de competencias en el siglo XXI**

(port) **Transformação e Desafios do Ensino Superior na Era Digital: Estratégias para o desenvolvimento de competências no século XXI**

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Abstract (en)

This study addresses the transformation and challenges of higher education in the digital age, highlighting the importance of innovative strategies for competency development in the 21st century. The objective is to analyze global trends such as digitalization, personalized learning, and the integration of emerging technologies that are redefining the educational landscape. The methodology used includes the analysis of relevant literature and the observation of educational practices in Latin America, particularly in Ecuador. The main findings indicate that educational innovation is crucial to adapt to the demands of a technologically advanced society, facing challenges such as resistance to change and the digital skills gap. The study contributes to the understanding of how higher education can evolve to be more inclusive, dynamic, and prepared for future challenges. The need for comprehensive strategies involving teacher training, ICT integration, and investment in learning resources is highlighted.

Keywords: Higher education; Educational innovation; Digitalization; Personalized learning; 21st-century skills.

Resumen

Este estudio aborda la transformación y los desafíos de la educación superior en la era digital, destacando la importancia de estrategias innovadoras para el desarrollo de competencias en el siglo XXI. El objetivo es analizar las tendencias globales como la digitalización, la personalización del aprendizaje y la integración de tecnologías emergentes que están redefiniendo el panorama educativo. La metodología empleada incluye el análisis de literatura relevante y la observación de prácticas educativas en América Latina, especialmente en Ecuador. Los hallazgos principales indican que la innovación educativa es fundamental para adaptarse a las demandas de una sociedad tecnológicamente avanzada, enfrentando desafíos como la resistencia al cambio y la brecha de habilidades digitales. El estudio contribuye al entendimiento de cómo la educación superior puede evolucionar para ser más inclusiva, dinámica y preparada para los desafíos del futuro. Se destaca la necesidad de estrategias integrales que involucren la capacitación docente, la integración de TIC y la inversión en recursos de aprendizaje.

Palabras claves: Innovación educativa; Digitalización; Personalización del aprendizaje; Competencias del siglo XXI.

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Summary

Este estudo aborda as transformações e os desafios do ensino superior na era digital, destacando a importância das estratégias inovadoras para o desenvolvimento de competências no século XXI. O objetivo é analisar tendências globais como a digitalização, a aprendizagem personalizada e a integração de tecnologias emergentes que estão redefinindo o cenário educacional. A metodologia utilizada inclui a análise da literatura relevante e a observação de práticas educativas na América Latina, particularmente no Equador. As principais conclusões indicam que a inovação educativa é crucial para a adaptação às exigências de uma sociedade tecnologicamente avançada, enfrentando desafios como a resistência à mudança e a lacuna de competências digitais. O estudo contribui para a compreensão de como o ensino superior pode evoluir para ser mais inclusivo, dinâmico e preparado para desafios futuros. É sublinhada a necessidade de estratégias abrangentes que envolvam a formação de professores, a integração das TIC e o investimento em recursos de aprendizagem.

Palavras-chave: *Inovação pedagógica; Digitalização; Personalização do aprendizado; Habilidades do século XXI.*

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Introduction

Higher education is at an inflection point, driven by global trends such as digitalization, the personalization of learning, and the integration of emerging technologies. These changes are redefining the educational landscape, forcing institutions to adapt and develop innovative strategies that respond to the needs of a technologically advanced society. The massification of higher education poses unique challenges and opportunities, by increasing access to learning, but also by demanding more adaptive and personalized teaching methods.

In Latin America, 21st century universities are intrinsically connected to the global context, without losing their unique and characteristics. The macro trends identified by Suasnabas (2022), massification, differentiation, virtualization and internationalization are transforming higher education. Each of these trends poses specific challenges, but also provides opportunities for innovation and development in education. (p. 31). Innovation in higher education is not limited to the use of technologies to personalize learning, but also involves the creation of educational programs that prepare students to compete in a global job market. This can include interdisciplinary approaches, international partnerships, and holistic learning experiences.

Digitalization, adaptive learning, and the personalization of learning are revolutionizing the way we teach and learn, offering more flexible, interactive, and student-centered educational experiences. Digitalization has allowed access to a large number of online educational resources, which can be used in a personalized way to adapt to the specific needs of each student. On the other hand, adaptive learning uses algorithms and technology to adjust the pace and content of learning according to each student's individual progress, facilitating more efficient and effective learning. Learning personalization, on the other hand, focuses on designing educational experiences that adapt to the interests, learning styles, and needs of each student, thus promoting more meaningful and motivating learning. Taken together, these trends are transforming education by making it more personalized, accessible, and student-oriented.

However, the implementation of pedagogical and technological innovations faces challenges such as resistance to change in pedagogical methodology, the digital skills gap between teachers and students, and insufficient technological infrastructure. To overcome these obstacles, it is necessary to develop strategies that include teacher training, the integration of ICT into teacher education, and investment in connectivity and learning resources.

The methodology used in this study includes the analysis of relevant literature and the observation of educational practices in Latin America. A comprehensive review of academic and research sources has been conducted to identify global trends that are redefining the education landscape, such as digitalization, personalization of learning, and the integration of emerging technologies. In addition, innovative educational practices have been observed in the region to understand how the challenges and opportunities presented by the digital age in higher education are being addressed and taken advantage of.

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In this context, this paper seeks to analyze the trends and challenges of innovative higher education. The objective is to recognize the transformation of higher education in Ecuador towards technological innovation so that it is more inclusive, dynamic and prepared to face the challenges of the 21st century.

Global Trends in Higher Education

Digitalization and personalization of learning1 are global trends in higher education that are transforming the way we teach and learn. In Latin America, and specifically in Ecuador, these trends are significantly impacting the design of educational programs, the delivery of content, and the interaction between teachers and students.

Digitalization refers to the use of digital technologies in the educational process. This includes the use of online platforms for content delivery, communication between teachers and students, and assessment of learning. On the other hand, personalization of learning involves adjusting teaching and learning methods to meet the needs of each student. This may involve applying adaptive technologies that facilitate student progress at their own pace and creating educational programs that consider each student's individual interests and abilities. In Ecuador, personalization of learning is a challenge due to a lack of resources and resistance to change in educational institutions.

The main trends identified by Suasnabas (2022) in the field of higher education, including the expansion of access, personalization, digitalization, globalization, commercialization, and regulation, are of particular importance in the context of Ecuador. For example, the massification of higher education in Ecuador has led to an increase in the demand for online and distance education, which has driven the virtualization of higher education in the country. Differentiation refers to the diversification of educational offerings to meet the needs of different groups of students. In Ecuador, this has been reflected in the creation of educational programs geared toward specific sectors of the population, such as technical and technological education programs for students seeking to quickly enter the labor market.

These trends are significantly impacting higher education in Ecuador and provide a framework for understanding and adapting to these changes. There is a need to continue to explore new ways of teaching and learning that make the most of the opportunities offered by these trends, while addressing the challenges they pose, such as the digital divide and resistance to change.

[1] Personalization of learning aims to improve students' motivation, engagement, and academic performance, as well as encourage the development of key skills such as critical thinking, creativity, and autonomy.

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Educational innovation in Ecuador

Educational innovation in Latin America and Ecuador is a crucial issue in the context of the 21st century, where higher education faces unprecedented challenges due to globalization, digitalization, and changing labor market demands. In Latin America, educational innovation has become a priority to address historical structural problems, such as inequality in access to education, the quality of teaching, and the relevance of academic programs. Universities and higher education institutions in the region are actively looking for ways to renew their pedagogical approaches, integrate emerging technologies, and foster a culture of continuous and adaptive learning. This drive for innovation is driven by the need to prepare students for an ever-changing world of work and to contribute to the social and economic development of their countries.

In Ecuador, educational innovation is gaining ground as a major component for the transformation of the higher education system. Ecuadorian institutions are exploring new teaching methodologies, such as project-based learning and the use of virtual environments, to enhance students' learning experience and increase their employability. In addition, there is a growing interest in the internationalization of higher education, which involves collaboration with foreign universities, student and faculty mobility, and the adaptation of curricula to global standards. Educational innovation in Ecuador is also geared towards addressing country-specific challenges, such as the inclusion of indigenous populations and the integration of ancestral knowledge into formal education. Through these initiatives, Ecuador seeks to position its higher education system as an engine of social change and sustainable development.

In the face of constant change in society and rapid technological advances, higher education is faced with the need to adapt and anticipate the demands of the environment. In this sense, reflection on past experiences, such as the one offered by Harris (as cited in Sanz, 2006) on education during the industrial revolution, can provide a valuable historical framework for understanding how educational institutions have responded to significant economic and social changes in the past. This historical approach can light the way for higher education institutions to develop innovative and effective strategies that enable them to lead in a context marked by constant transformation (p. 62).

In the specific case of Ecuador, educational innovation is part of a transformation process that seeks not only to improve the quality and accessibility of higher education, but also to align it with the needs of national development and social inclusion. Ecuadorian universities are exploring new pedagogical methodologies, incorporating digital technologies into the classroom, and fostering interdisciplinarity and international collaboration. However, the effective implementation of these innovations faces obstacles such as resistance to change, the digital divide, and the need for adequate technological infrastructure. Despite these challenges, educational innovation in Ecuador represents an opportunity to redefine higher education and contribute to the country's sustainable development.

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Technological innovation has transformed higher education by offering more flexible and accessible learning models, such as online education and the integration of emerging technologies. These tools allow students to access educational content from anywhere and at any time, breaking the physical and temporal limitations of traditional education. Online education, for example, has democratized access to higher education by removing geographical and financial barriers, allowing more people to earn academic degrees and improve their professional skills.

In addition, technological innovation is transforming teaching and learning, enabling immersive and distance learning experiences. Online communication technologies, such as video conferencing, allow students to participate in classes and academic activities from anywhere in the world, encouraging collaboration and the exchange of ideas between people from different cultures and educational contexts. In line with Harris's ideas about the discipline and precision required by the industrial revolution, Rueda and Portilla (2020) state that innovative higher education would focus on the development of skills and competencies relevant to today's economy, such as critical thinking, creativity, resilience, and adaptability (p. 45-46).

Challenges of Implementing Educational Innovations

Nowadays, the implementation of pedagogical innovations in learning is a challenge, since innovation is not only about implementing virtual tools, nor is it simply about using applications; To innovate is also to generate change, which implies taking risks to obtain new knowledge and results, and this requires clear criteria to assess and measure its impact. Innovation in higher education can also involve changes in the organizational structure of educational institutions. According to Villa et al., (2007), innovation is presented not only as a series of technical or methodological changes, but as a comprehensive transformation in the way higher education is conceptualized and carried out with creative and multidisciplinary pedagogical approaches. In this regard, the creation of new business models to deal with financial challenges, and collaboration with industry and other sectors will ensure graduates are better prepared for the world of work. (Gros y Lara, 2009)

On the other hand, digitalization in higher education has revolutionized the way knowledge is imparted and received. Currently, the integration of digital tools in the classroom allows for greater interactivity and accessibility to learning. Battro (1997) states that: "The raw material of the 'new education' is the bit per second, the amount of information per unit of time" (p. 13).

The author highlights the importance of digital information, or "bits," in the evolution of contemporary education. The phrase "raw material of the new education" proposes that, in the digital age, electronically processed information has become the basic and essential element of learning and teaching. The transition to digital education requires higher education institutions to rethink and transform their pedagogical methodologies.

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There are concerns about how methodological changes are handled in educational programs to incorporate new digital technologies. These initiatives often focus on maintaining existing structures and practices, rather than harnessing the transformative potential of technology in education, for which teachers must learn how to create and deliver content in digital formats and interact with students in virtual environments (Battro, 1997).

Types of Emergent Learning

Adaptive learning emerges as an innovative trend, using technology to personalize the educational process according to the unique needs of each student. Through the use of online platforms and algorithms, content and challenges are adapted in real-time based on learner performance and responses. This allows for a more personalized and dynamic learning experience, where students can progress at their own pace and focus on the areas that need the most attention. (Ramírez y León, 2023)

For Ramírez and León (2023):

> It is important to generate strategies that strengthen the teaching-learning processes in a more individual way with specific routes where the student feels more valued and involved and that lead them to develop their competencies and skills, considering that students are different and therefore also learn differently (Ramírez y León, 2023, p. 2).

The authors state that each student is unique and therefore learns differently. It is necessary to take the time to design strategies that take this diversity into account, so that the competencies and skills of each student can be developed in the best possible way.

Personalized learning seeks to ensure that education meets the individual needs, abilities and interests of each student as Ramírez and León (2023) recognize, in many cases, with the help of artificial intelligence and data analysis, institutions can create educational itineraries that link the pace of learning with the preferences of students. This approach contrasts with the traditional model of mass education, driven by the industrial revolution, which emphasized uniformity and standardization.

MOOCs democratize access to education, allowing people around the world to access high-quality courses taught by prestigious national or international universities. These courses reflect the trend of massification, but also differentiation, as they offer a variety of topics and depths of study, making it a disruptive factor in education. In addition, they are related to internationalization, since students from anywhere in the world can participate, and to commodification, since they propose a different business model for higher education. Even so, there are debates that call into question the pedagogical component within these massive and open resources, but here we focus on why it is a disruptive factor in the educational field (Fernández, 2017, p. 448).

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These elements can also be integrated into the analysis of innovation, considering the development of relevant skills, and can be seen in personalized learning, as they strengthen skills such as problem-solving, critical thinking and creativity, which are fundamental in the knowledge economy.

In this sense, it is important to characterize and identify the factors facing higher education worldwide and how they impact the implementation of pedagogical innovations and educational technology. One of the factors that resonates the most within the context of "innovation" is the resistance to change in pedagogical methodology and this is common in any institution, in fact, in the educational field it is more visible because teachers still show reluctance to modify their traditional teaching methods, especially when they are not familiar or convinced of the benefits of the new methodologies. for example, flipped teaching that is often used in MOOCs.

This factor affects the implementation of pedagogical innovations because it can limit the adoption of more personalized and technologically advanced educational approaches. The impact is varied, being more pronounced in contexts where the institutional culture is especially rigid or where there are insufficient incentives for teachers to update their skills.

Another factor is the digital skills gap between teachers and students, which, for the most part, creates barriers to the implementation of virtual education and emerging technologies in the classroom. Faced with students who are digital natives and adapt quickly to new platforms, some teachers may not be as comfortable with technology, which can limit their ability to integrate digital tools into their teaching.

On the other hand, in some institutions, the technological infrastructure is inadequate. The lack of access to high-speed computers, up-to-date digital tools, optimal connectivity, and adequate technical support can prevent the implementation of pedagogical innovations such as online learning, MOOCs, among others. Undoubtedly, such a factor is decisive for innovation, as it directly affects the ability of students and teachers to participate in digitized learning environments. In contexts with limited infrastructure, existing inequalities can be widened: students with fewer material resources will have fewer opportunities to benefit from educational innovations.

Based on these challenges, higher education institutions in Latin America must develop strategies to manage change, improve teachers' digital competencies, and strengthen technological infrastructure. This could include ongoing professional development programs for teachers, investments in technology, and partnerships with MOOC platforms to improve access to and quality of education.

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Strategy for Resistance to Change in Pedagogical Methodology

In view of this, the following proposals have been thought of to address the identified factors that impact the challenge of implementing pedagogical innovations and educational technology in higher education. In this regard, the following strategies are proposed that could be implemented:

1. **Development of teacher training programs:**

    - Create professional development programs focused on modern pedagogy and digital didactics. These programs would include workshops, seminars, and courses that present the advantages of new methodologies, such as flipped teaching, and provide practical examples of their successful implementation. (Bernate, 2020)
    - A key element would be to involve teachers in the design process of these programs to ensure their relevance and increase acceptance.

According to Córica (2020): "Resistance to change in educational institutions manifests itself when the people involved lack interest in it". In fact, for Rumelt (as cited in Ahumada & Sánchez, 2021), resistance to change can arise due to a distorted perception caused by a lack of clear objectives, an insufficient long-term prospective vision, or the inability of the institution to correct past mistakes. In this sense, the authors point out that one of the reasons why people may resist change is because they perceive that the institution does not have defined goals, “this lack of clarity and direction can generate uncertainty and resistance in individuals in the face of proposed changes, especially when we talk about innovation in education” (Córica, 2020, p. 156).

2. **Digital Skills Gap Strategy**

    - **Incorporation of ICT in teacher training:**

        - Integrating the use of ICTs into teacher education and training would not only improve teachers' digital skills, but also model how to integrate these tools into their own teaching.

In this regard, Perdomo and González (2020) state that the development of digital competences involves acquiring the knowledge, skills, and abilities necessary to effectively use ICTs in various contexts. "In the field of university education, teachers are immersed in a process of redefining practices and roles, which requires them to establish criteria to select the most appropriate proposals, strategies and tools to achieve pedagogical objectives” (p. 93).

In the article "Teacher training for the integration of ICT in educational practice", an experience is presented in the Faculty of Engineering of the Autonomous University of Querétaro, where the training of

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teachers in the use of ICT was divided into two main phases: awareness of the value of ICT in education and technical training in web 2.0 tools. A content management system was developed and resources such as blogs, wikis, forums and educational platforms were provided. Two ICT training courses were conducted in 2010 and the integration of ICT in education was evaluated. The assessment of the integration of ICT in teaching also reflects a commitment to continuous improvement and adaptation to contemporary educational needs (Guzmán et al., 2011, p. 4).

3. **Strategy for Insufficient Technology Infrastructure**

    - **Investment in connectivity and learning resources:**

        - Ensure investment in high-speed connectivity infrastructure and in the acquisition of digital devices that can be loaned to students and teachers. In addition, develop digital learning resources such as virtual libraries and online labs.

To exemplify a good practice in this strategy to be addressed, we can mention the experience of the EPDs of the ULP in San Luis, the Digital province of Argentina. The educational proposal focuses on the creation of a digital ecosystem focused on social inclusion and learning. Since 1998, the province has planned its integration into the 'Information and Knowledge Society', implementing an Information Highway that provides free WiFi to all inhabitants (Carrasco y Baldivieso, 2014).

This has achieved open access to the Internet for teachers, students and citizens in general, facilitating social inclusion and avoiding excess liquidity in society. These elements have been the basis of this digital ecosystem, enabling the development of educational content, the massification of online learning environments, and helping teachers transform their role from transmitters of information to learning facilitators and online tutors of their students.

Another important element of the ecosystem is the University of La Punta, a higher education institution that designs and develops technical careers specialized in issues of the 'Information and Knowledge Society' (Carrasco y Baldivieso, 2014, p. 26).

It is worth mentioning that these strategies must be supported by clear institutional policies and long-term financing commitments. Successful implementation will also require continuous evaluation and adjustment to ensure that interventions are effective and that the needs of all involved in the educational process are being met.

In this sense, to address pedagogical innovations and educational technology in Ecuador, considering the trends and challenges identified, it is important to contextualize the strategies to the reality of the country. Educational innovation is a complex process that encompasses various aspects, as it is influenced by political,

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economic, ideological, cultural, and psychological factors that impact at various levels of context, from the classroom to the university group. This process involves the collaboration of several participants in the field of education, who analyze, reinterpret, select and shape the proposals for change, thus contributing their perspective and experience to the innovation process (Macanchí et al., 2020).

Proposals for pedagogical innovation and educational technology must be sensitive to the socioeconomic context of Ecuador, which has an urban area and rural areas, each with different levels of access to technological resources. The country's cultural diversity demands that educational solutions be inclusive and respectful of local knowledge and languages.

Focusing on the implementation of professional development programs for teachers in educational technology will need to consider variations in teachers' familiarity and comfort with technology. Partnerships with technology platforms for enhanced learning can be effective if they are adapted to the available technology infrastructures, which can vary between regions. In addition, the adoption of advanced learning management systems requires a reliable internet infrastructure, which may not be uniformly available across the country.

Specific challenges of implementing pedagogical innovations in Ecuador may include limitations in broadband infrastructure, especially in rural areas, and the need for technological training for both students and teachers. Ecuador's government policies on education and investment in educational technology are key factors in the success of these initiatives. In addition, it is important to mention that there may be cultural resistance to changes in traditional teaching methodology, and these attitudes need to be addressed with sensitivity and commitment.

To overcome these challenges, the following proposals could be considered:

1. Development of teacher training strategies that are mobile and flexible, able to reach teachers in remote areas using technology adapted to local conditions.
2. Strategic partnerships with telecommunications companies, private companies, non-governmental, among others, to improve Internet infrastructure in underserved rural and urban areas, ensuring that learning management systems are accessible to all students.
3. Community awareness programs that involve parents and local leaders in the education process, promoting educational technology as a bridge to future opportunities and not as a replacement for traditional values and methods.
4. Educational pilots in selected areas, adapted to Ecuador's cultural and linguistic diversity, to demonstrate the effectiveness of pedagogical innovations and collect data on best practices for wider implementation.

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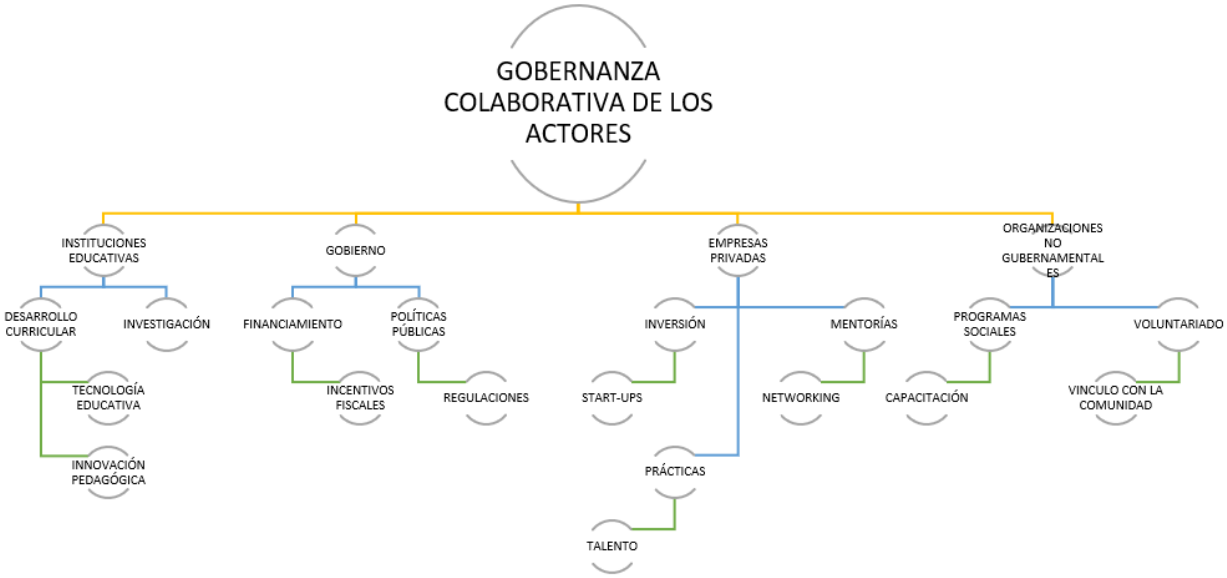
When considering these challenges in the local context, it is important to consider the complexity and diversity in the implementation of pedagogical innovations and educational technology in Ecuador, for which a governance model is established that can be linked to the challenge presented:

Governance model that involves collaboration of different actors:



Source: Macías, I. (2024), original versión in Spanish.

This model involves collaboration between different actors, including educational institutions, private companies, non-governmental organizations, and the government, to implement pedagogical innovation and educational technology proposals. Each actor would contribute resources, knowledge, and experience to address the identified challenges in a comprehensive and sustainable manner.

Here it can be identified that educational institutions would focus on curriculum development and pedagogical innovation, integrating technology in the classroom and promoting applied research. While the **government** would play an important role in establishing favorable public policies, regulating, and offering tax incentives and financing for innovation projects.

On the other hand, private companies could invest in higher education initiatives, provide mentoring and create internship opportunities for students, as well as support start-ups and encourage networking. Involving NGOs is also important as they would work on social programs, volunteering, community outreach to ensure that education is accessible and relevant to social needs.

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Methodology

To analyze the trends and challenges in higher education in the digital age, a literature review methodology was used. Relevant academic and research sources in the field of higher education and educational innovation were selected, prioritizing recent studies and works by recognized authors in the area. Selection criteria included relevance to the topic of study, methodological quality, and diversity of perspectives.

To identify the relevant trends and challenges, a thematic analysis of the selected texts was carried out, highlighting those aspects that reflect characteristic changes in higher education, such as digitalization, the personalization of learning and the integration of emerging technologies.

In the context of the transformation of higher education in Ecuador, pedagogical and technological innovation plays an important role. The implementation of virtual tools and applications goes beyond a simple technological use; It implies generating characteristic changes in the educational process. This requires taking risks to obtain new knowledge and results, which in turn demands clear criteria to assess and measure their impact. The digitalization of higher education has revolutionized the way knowledge is imparted and received, allowing for greater interactivity and accessibility to learning. The integration of emerging technologies such as adaptive learning, which uses algorithms to personalize the educational process, reflects the adaptation of institutions to the unique needs of each student.

Ecuador's cultural and linguistic diversity demands that educational solutions be inclusive and respectful. Professional development programs for teachers in educational technology should take into account regional variations in familiarity and comfort with technology. In addition, the implementation of pedagogical innovations faces specific challenges, such as limitations in broadband infrastructure, especially in rural areas, and the need for technological training for both students and teachers. These challenges require teacher training strategies that are mobile and flexible, capable of reaching teachers in remote areas using technology adapted to local conditions.

The evaluation of the transformation of higher education in Ecuador was carried out through an analysis of global trends and the challenges faced by the implementation of pedagogical and technological innovations. It was concluded that transformation in higher education is a complex process that requires comprehensive strategies adapted to the specific realities of each context. Trends were identified that are transforming the educational landscape, requiring educational institutions to adopt innovative approaches to respond to these changes. The implementation of these innovations is relevant to overcome obstacles and requires strategies adapted to the specific realities of each context, considering the cultural and socioeconomic diversity of the region.

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Conclusion

In the analysis carried out on global trends in higher education and the challenges faced by the implementation of pedagogical and technological innovations, it is concluded that the transformation in higher education is a complex process that requires comprehensive strategies adapted to the specific realities of each context. Digitalization, the personalization of learning, the adoption of emerging technologies, and the expansion of higher education are all trends that are transforming the educational landscape, requiring educational institutions to adopt innovative approaches to respond to these changes.

It is critical to recognize that the implementation of pedagogical and technological innovations faces various challenges, such as resistance to change in pedagogical methodology, the digital skills gap between teachers and students, and insufficient technological infrastructure. To overcome these obstacles, strategies such as the development of teacher training programs, the integration of ICTs in teacher training, and investment in connectivity and learning resources are proposed.

In addition, the importance of collaborative and participatory governance involving different actors, such as educational institutions, private companies, non-governmental organizations, teachers, students, and the community in general, is highlighted to ensure that pedagogical and technological innovation proposals are sustainable, inclusive, and effective.

In the Latin American scenario, and in particular in Ecuador, the growth in access to higher education, together with trends such as personalization, digitalization, globalization, commercialization and regulations, presents significant challenges, but also opens doors for innovation and progress. The effective implementation of these innovations is essential to overcome obstacles and requires strategies adapted to the specific realities of each context, considering the cultural and socioeconomic diversity of the region.

References

Ahumada, V., y Sánchez, A. (2022). Resistencia al Cambio de los Docentes de un Instituto de Educación Superior. *Revista Electrónica en Educación y Pedagogía, 6*(10). https://doi.org/https://doi.org/10.15658/rev.electron.educ.pedagog22.04061010

Battro, A. (1997). La educación digital una nueva era del conocimiento. En *Educación Digital.* EMECE. https://ifdc6m-juj.infd.edu.ar/aula/archivos/repositorio/0/170/La_educacion_digital_BATTRO__DENHAM.pdf

Bernate, J. (2020). Pedagogía y Didáctica de la Corporeidad. Una mirada desde la praxis. *Retos, 42*, 27-36. https://doi.org/https://doi.org/10.47197/retos.v42i0.86667

Carrasco, S., y Baldivieso, S. (2014). Los recursos de aprendizaje en la educación a distancia. Nuevos escenarios, experiencias y tendencias. La experiencia de las EPD de la ULP en San Luis, la provincia Digital de Argentina. En *Los Recursos de Aprendizaje en Educación a Distancia: Nuevos Escenarios, Experiencias y Tendencias* (pp. 19-42). Universidad Alas Peruanas.

Revista YUYAY, Estrategias, Metodologías & Didácticas Educativas ISSN: 2953-6685 e-ISSN: 2953-6677

Córica, J. (2020). Resistencia docente al cambio: Caracterización y estrategias para un problema no resuelto. *Fundación Latinoamericana para la Educación a Distancia, FLEAD, Argentina, 23*(2), 255-272. https://doi.org/https://doi.org/10.5944/ried.23.2.26578

Fernández, M. (2017). Democratizando la educación a nivel mundial: ¿ficción o realidad? el papel de los cursos en línea masivos y abiertos. . *Revista de Currículum y Formación de Profesorado, 21*(2).

Fuentes, A., López, J., y Pozo, S. (2019). Análisis de la Competencia Digital Docente: Factor Clave en el Desempeño de Pedagogías Activas con Realidad Aumentada. *REICE. Revista Iberoamericana sobre Calidad, Eficacia y Cambio en Educación, 7*(2). https://doi.org/https://doi.org/10.15366/reice2019.17.2.002

Gros, B., y Lara, P. (2009). Estrategias de innovación en la educación superior: El caso de la Universitat Oberta de Catalunya. *Revista Iberoamericana de educación*(49), 223-245.

Guzmán, T., García, M., Espuny, C., y Chaparro, R. (2011). Formación docente para la integración de las TIC en la práctica educativa. *Apertura, 3*(1). https://doi.org/http://www.redalyc.org/articulo.oa?id=68822701001

Macanchí, M., Orozco, B., y Campoverde, M. (2020). Innovación educativa, pedagógica y didáctica. Concepciones para la práctica en la educación superior. *Revista Universidad y Sociedad, 12*(1). http://scielo.sld.cu/scielo.php?script=sci_arttext&pid=S2218-36202020000100396

Perdomo, B., y González, O. (2020). Competencias digitales en docentes universitarios: una revisión sistemática de la literatura. *DMETIC,Revista de Educación Mediática y TIC, 9*(2), 92-115. https://doi.org/https://doi.org/10.21071/edmetic.v9i2.12796

Ramírez, M., y León, F. (2023). M-Learning como una herramienta para el aprendizaje adaptativo: una propuesta para la educación superior. *International Humanities Review / Revista Internacional de Humanidades*, 2-14. https://doi.org/https://doi.org/10.37467/revhuman.v12.4767

Ruda, J., y Portilla, S. (2020). Formación en competencias laborales generales, desafío para la educación superior. *I+D Revista de investigaciones, 15*(1), 40-48.

Sanz, F. (2006). La mercantilización de la educación como escenario muncial del espacio europeo de educación superior. . *Educación XXI*, 57-76. http://e-spacio.uned.es/fez/eserv/bibliuned:EducacionXXI-A21BAAEF-60D0-AC90-D1CC-1FDE020D18D4/Documento.pdf

Suasnabas, L. (2022). Los desafíos, aprendizajes, consecuencias y escenarios futuros virtuales para la educación superior, frente a la pandemia (COVID-19). *Mawil Publicaciones de Ecuador, 1*. https://doi.org/https://doi.org/10.26820/978-9942-602-29-9

Villa, A., Escotet, M., y Goñi, J. (2007). La innovación en la educación superior. En V. Aurelio, E. Miguel, y J. Goñi, *Modelo de innovación en la educación superior.* Bilbao: Universidad de Deusto.

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Innovation in the 21st Century: Gamification, Artificial Intelligence and Art as Transformative Tools

(es) Innovación Educativa en el Siglo XXI: Gamificación, Inteligencia Artificial y Arte como Herramientas Transformadoras

(port) Inovação Educacional no Século 21: Gamificação, Inteligência Artificial e Arte como Ferramentas Transformadoras

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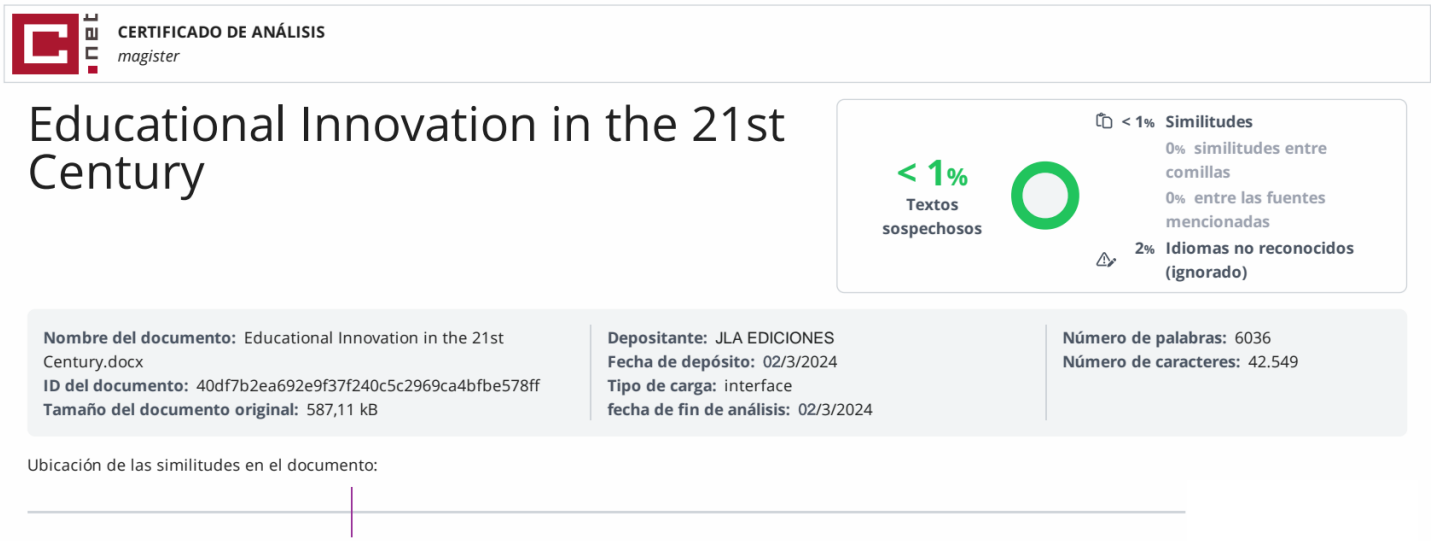

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Abstract

In the current educational context, teachers face the challenge of adapting their teaching methods to the new generations of students, who are more familiar with technology and have special educational needs. This article analyzes the crucial role of teachers throughout history and highlights the importance of being resilient, innovative, and promoters of inclusive innovation. It explores the use of gamification, artificial intelligence (AI) and art as essential tools in teaching practice, which enrich and transform the educational process. Gamification, for example, promotes active participation and student engagement using game elements in the classroom. On the other hand, AI could personalize learning experiences and offer immediate feedback, redefining the concept of the traditional classroom. In addition, the arts awaken students' creativity and sensitivity, encouraging critical thinking and enriching learning. The integration of these tools is presented to ensure sustainable learning adapted to the individual needs of each student.

Keywords: teacher; educational innovation; gamification; artificial intelligence (AI) in education; art in education

Resumen

En el contexto educativo actual, los docentes se enfrentan al desafío de adaptar sus métodos de enseñanza a las nuevas generaciones de estudiantes, más familiarizados con la tecnología y con necesidades educativas especiales. En este artículo, se analiza el papel crucial del docente a lo largo de la historia y se destaca la importancia de ser resilientes, innovadores y promotores de la innovación inclusiva. Se explora el uso de la gamificación, la inteligencia artificial (IA) y el arte como herramientas esenciales en la práctica docente, que enriquecen y transforman el proceso educativo. La gamificación, por ejemplo, promueve la participación activa y el compromiso de los estudiantes mediante el uso de elementos de juego en el aula. Por otro lado, la IA tiene la capacidad de personalizar experiencias de aprendizaje y ofrecer retroalimentación inmediata, redefiniendo el concepto del aula tradicional. Además, las artes despiertan la creatividad y sensibilidad de los estudiantes, fomentando el pensamiento crítico y enriqueciendo el aprendizaje. Se presenta la integración de estas herramientas como una forma de garantizar un aprendizaje sostenible y adaptado a las necesidades individuales de cada estudiante.

Palabras claves: docente; innovación educativa; gamificación; inteligencia artificial (ia) en educación; arte en la educación

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Summary (port)

No atual contexto educativo, os professores enfrentam o desafio de adaptar os seus métodos de ensino às novas gerações de alunos, mais familiarizados com a tecnologia e com necessidades educativas especiais. Este artigo analisa o papel crucial dos professores ao longo da história e destaca a importância de serem resilientes, inovadores e promotores de inovação inclusiva. O uso da gamificação, da inteligência artificial (IA) e da arte são explorados como ferramentas essenciais na prática docente, que enriquecem e transformam o processo educacional. A gamificação, por exemplo, promove a participação ativa e o envolvimento dos alunos através da utilização de elementos de jogo na sala de aula. Por outro lado, a IA tem a capacidade de personalizar as experiências de aprendizagem e oferecer feedback imediato, redefinindo o conceito de sala de aula tradicional. Além disso, as artes despertam a criatividade e a sensibilidade dos alunos, estimulando o pensamento crítico e enriquecendo o aprendizado. A integração destas ferramentas apresenta-se como forma de garantir uma aprendizagem sustentável e adaptada às necessidades individuais de cada aluno.

Palavras-chave: professor; inovação educacional; gamificação; inteligência artificial (IA) na educação; arte na educação

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Introduction

In the educational environment of the 21st century, teachers face a constant challenge: adapting their teaching methods to meet the demands of a generation of digital native learners and to cater to the special educational needs of diverse groups. In this context, gamification, artificial intelligence (AI) and art emerge as powerful tools that transform the conception and implementation of education.

This article examines the central role of the teacher throughout history as a key agent in the development of civilizations and societies. It highlights the need for teachers to be resilient, innovative and promoters of inclusive innovation in the current educational context. It addresses how technological innovations, particularly gamification and AI, are being integrated into teaching practice to offer more personalized and effective learning experiences. In addition, it explores how the arts enrich the educational process, fostering creativity, critical thinking, and serving as a bridge between culture and learning.

Through the analysis of these tools and their impact in the classroom, it seeks to provide a comprehensive vision of educational innovation in the 21st century, highlighting the importance of adopting innovative pedagogical approaches that adapt to the individual needs of students and promote sustainable learning in an ever-changing world. In this context, reflections such as those of Chacón and Limas (2019) underline the need to "evolve in training concepts, using tools that transcend into new educational innovations typical of our time" (p. 114).

The Role of the Teacher Throughout History

From ancient civilizations to the modern era, the role of the teacher has been fundamental in the development of civilizations and societies. In ancient Greece, philosophers such as Socrates, Plato, and Aristotle not only taught academic knowledge, but also guided their disciples in the development of virtues and moral values.

During the Middle Ages, monasteries and monastic schools were centers of education and preservation of knowledge, where monks passed on not only the ability to read and write, but also the religious and cultural values of the time. According to Susana Guijarro (2008), for "the transmission of knowledge during the early centuries of the Middle Ages [...] The monastic and episcopal or cathedral schools assumed the classical program of the Liberal Arts as the basis of teaching and the means of access to theology" (p. 452).

In contrast to the past, in the modern era and with the establishment of formal education, the role of the teacher has undergone a remarkable evolution. Now, teachers are not only transmitters of knowledge, but also play broader and more diverse roles, such as facilitators, mediators, moderators, designers, and producers of educational material, among others, thus adapting to the changing needs of the contemporary educational environment. This transformation coincides with the shift in responsibility for education "until the early twentieth

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century, education was provided by the family, religious institutions, charter schools, vocational learning and higher education. Today, in most countries, this responsibility falls primarily on state governments" (Marenales, 1996, p. 1)

In the context of the 21st century, teachers are required to be even more versatile and adaptable, being resilient, responsive, innovative, communicative, inclusive, observant, empathetic and attentive, and promoters of inclusive innovation. This involves being open to new methodologies, technologies, and pedagogical approaches that adapt to the changing needs of students and the current educational environment.

To address these challenges, it is imperative that educators make changes to their teaching practice. It is essential that they adopt new technologies and methodologies in the classroom, such as the integration of digital tools and online platforms, in order to improve interactivity and personalization of learning. In addition, they should encourage a project-based approach to learning that allows students to explore topics more deeply and creatively. These changes are critical to ensuring educators are prepared to meet the needs of students in an ever-evolving world.

Following this line of thought, Ortega Sánchez (2007) underlines that:

> Educators, trainers, virtual tutors, knowledge managers, moderators, must learn to use technological resources didactically, guiding, orienting, motivating, facilitating access to information, communication, training developed by new methodologies and a media pedagogy that generates quality teaching that promotes the design of new learning environments (p. 103).

On the other hand, to adapt to new generations of students, teachers can use technology as a tool to improve participation and engagement. For example, using online educational games to reinforce concepts and skills, or collaborative learning platforms to encourage collaboration and teamwork. Additionally, they can use social media and other digital tools to communicate with students more effectively and stay on top of their needs and concerns.

Consequently, to ensure that students acquire the skills and competencies needed to succeed in an ever-changing world, teachers, who play a crucial role in education, must be willing to adapt and promote innovation in the classroom. González-Monteagudo (2020) states that "educational innovation usually refers to processes that have as their central objective the improvement of educational quality, the development and experimentation of new or alternative methodologies, the increase in the participation and involvement of the different educational actors" (p. 1). Therefore, it is essential for educators to stay up to date with the latest trends and developments in education so that they can offer their students an enriching and relevant learning experience.

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Challenges and opportunities in the 21st century

In the 21st century, education faces a number of unique challenges and opportunities. On the one hand, the increasing diversity of students, the demands of a digitized society, and the need to prepare students for an ever-evolving job market pose significant challenges for educators. On the other hand, technological innovations, such as gamification, artificial intelligence (AI), and art, offer unprecedented opportunities to improve the quality and effectiveness of education.

The integration of technology into the classroom is crucial to maintaining the relevance and effectiveness of education in the 21st century. Educators need to adapt to digital learners' learning styles and use interactive tools to improve participation and engagement. One of the main challenges facing education in this century is adapting to new generations of students, who are increasingly familiar with technology and who have different learning styles than previous generations. Educators must find innovative ways to capture the attention and engage these students, using tools and methodologies that are relevant and effective to them.

In this sense, Ortega (2007) states that:

> The relevance of providing technological literacy to teachers, along with adequate training in the effective use of new technologies, lies in the need to train teachers to be competent users of technological tools and to be able to guide the search for information online. In addition, it is crucial to integrate this training into a teaching model focused on the planning of objectives, methods and evaluations of the teaching-learning process, which includes the development of teaching materials adapted to the learning environment. (p. 105).

To which are added the statements of Roig Vila (2002):

> It is necessary for teachers (like all people entering the 21st century) to know and use ICTs, their pedagogical possibilities, and to value them as a resource to improve and enrich the teaching and learning process. It is necessary for them to develop strategies to integrate them into their teaching practice, because these resources are powerful support tools, they are motivating, socializing didactic materials and enhance different skills (linguistic, communicational, rational and artistic) that allow both the exchange between teachers and between students (p. 160)

Another challenge of great importance, in today's educational environment, lies in the attention to special educational needs (SEN). This challenge encompasses a variety of student groups, including those with physical, cognitive, or emotional disabilities. Educators face the crucial task of being inclusive and adapting their pedagogical practices to ensure that all students, regardless of abilities or circumstances, have equitable access to quality education.

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As Saona (2019) mentions, "it is essential that teachers adopt a pedagogy with an inclusive approach, which implies being prepared to face the challenges and assume the necessary responsibilities to effectively involve and collaborate in the teaching process" (p. 26). This preparation not only involves the acquisition of knowledge about inclusive strategies and methodologies, but also the development of an empathetic and respectful attitude towards the diversity of students. Thus, educators must be trained to identify the individual needs of each student and to implement reasonable accommodations that promote their participation and academic success.

In addition, a joint effort of the entire educational community is required to create truly inclusive learning environments. This involves close collaboration between teachers, support staff, families, and inclusive education professionals to design programs and services that meet the individual needs of each student. By prioritising inclusion and diversity in the classroom, an environment of mutual respect, acceptance and collaborative learning is promoted, benefiting not only students with SEN, but the entire school community.

In this sense, given the complexity and importance of adequately addressing special educational needs in the current context, it is evident that there is a need to delve deeper into this topic through additional research. Therefore, in future studies, we intend to further explore best practices in educational inclusion and SEN care.

However, these educational challenges can also be seen as opportunities for innovation and progress, as is the case with gamification. In the words of Pérez and Gértrudix-Barrio (2021), gamification has become a pedagogical technique that seeks to improve teaching and learning processes. This strategy, by integrating elements of play into the classroom, not only motivates students, but also increases their engagement with learning. By turning the educational process into an interactive and fun experience, gamification stimulates the active participation of students in their own academic development. Thus, it emerges as a valuable tool in the search for more effective and engaging methods for teaching and learning in the 21st century classroom.

From their perspective, Oliva (2016) states that:

> Gamification is not only limiting the class to obtaining points or rewards; Gamification turns the class into a fun event in which the concerns and motivations of the students are explored, which allows us to get to know them better, since an educational process lacking gamification lines or strategies, restricts the protagonism of the student, which does not contribute to creating a didactic impulse that gives the class a motivational spirit that can be strengthened with surprise and reward (p. 36)

According to their approach, gamification transforms the educational experience into an exciting event where students' individual motivations and concerns are explored. This approach allows for a better understanding of students, since an educational approach devoid of gamified elements limits their active participation and does not foster a dynamic educational environment. In this sense, the integration of gamified

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strategies in the classroom not only creates a more motivating environment, but also strengthens the interaction between teachers and students, promoting more meaningful and enriching learning.

In this same context, where challenges and opportunities are intertwined, there is a growing interest in the use of artificial intelligence (AI) in a variety of areas. However, it is crucial to recognize that this technology is not only limited to transforming commercial and industrial sectors, but also plays a critical role in education. As Moreno (2019) points out, "most of these achievements are only seen in the fields of engineering, but it must also be recognized how artificial intelligence today is also being part of the educational processes of teaching and learning" (p. 262). This is leading to the creation of new tools that redefine and reinvent conventional educational methods thanks to the operational potential of artificial intelligence.

The ability of artificial intelligence to personalize each student's learning experiences, tailoring them to their individual needs and paces, represents a significant advance in education. By collecting data on students' performance, preferences, and mode of learning, artificial intelligence systems can provide material and activities tailored to everyone, thus promoting a more effective and stimulating learning process (Pimienta & Mosquera-Martínez, 2022). In addition, this technology allows educators to identify areas for improvement and provide targeted and timely feedback, contributing to students' academic success.

On the other hand, the field of the arts stands out as a bastion of innovation and renewal in the current educational process. Not only do they constitute a source of creativity and self-expression, but they also encourage critical thinking by challenging students to interpret and question the world around them through different artistic perspectives. In this way, the arts offer a unique and meaningful avenue for students to develop not only artistic skills, but also a deeper understanding of themselves and the world around them.

In line with this statement, Silva (2022), in his study entitled "Didactic Guide to Educommunicative Tools", highlights that "art as an educational resource allows total flexibility and an interdisciplinary character, which is significant for all types of knowledge". At the same time, it highlights that "its application facilitates the development of skills, capacities and abilities in the learner, by promoting cultural conservation, communication, equality and the study of social contexts, among other aspects" (p. 11). In addition, the author, in this guide, offers a list of artistic resources to be applied in teaching-learning processes.

It is important to recognize that learning through the arts enriches the educational experience and promotes inclusion in the classroom. The arts offer a space where students can express their individuality and explore diverse cultural and social identities. By incorporating artistic practices into the curriculum, educators can create an inclusive environment where each student feels valued, contributing to students' creative and cognitive development and building a more cohesive and respectful school community. In this sense, Menés, Céspedes and Silva (2017) suggest teaching-learning strategies that foster inclusion, promoting the active participation of students with works of art in the classroom. This seeks to motivate students and evaluate how this participation impacts their learning and the educational community.

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As evidenced, in the educational landscape of the 21st century, we are facing significant challenges that demand innovative and adaptive responses from educators. However, in the midst of these challenges, there are also exciting opportunities to redefine and revitalize education. Thus, the integration of new technologies, the exploration of more dynamic and student-centered pedagogical methodologies, and the promotion of creativity and innovation in the classroom are just some of the ways to take advantage of this transformative potential. In this sense, educators play a crucial role as agents of change, committed not only to transmitting knowledge, but also to cultivating skills and competencies that prepare students to meet the challenges of the contemporary world.

Figure 1

Educational Opportunities of the 21st Century: Integrating Gamification, Artificial Intelligence and Art.

Note: The figure highlights the integration of Gamification, Artificial Intelligence, and Art around the core concept. Innovative tools that come together to create transformative opportunities in education. Author: Rodolfo Jaime Silva Jurado (2024)

Gamification: An Innovative Tool for Teaching

In the context of emerging opportunities, gamification presents itself as an exciting possibility to innovate and enrich education. It is a pedagogical strategy that integrates elements of play in non-playful environments, such as the classroom, with the purpose of improving student motivation, engagement and learning. This technique has gained popularity in education due to its ability to transform the learning process into a more interactive, fun, and relevant experience for 21st century students who are familiar with the interactivity and

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immediacy of digital games. However, as Cortizo, Carrero, Monsalve, Velasco, Díaz, & Pérez (2011) point out, "One of the most curious aspects of gamification is that not all games are really 'gamified', nor are all applications that use gamification techniques games as such" (p. 2).

As described by Werbach & Hunter (2012), the principles of gamification are based on dynamics, mechanics, and elements. Dynamics represent the concept and underlying structure of the game. Mechanics are the processes that drive the progress of the game, while elements are the concrete implementations of these dynamics and mechanics, such as avatars, badges, points, collections, rankings, levels, equipment, among others.

This approach carries over to the educational realm, where gamification is used to motivate students to overcome challenges and achieve goals. By integrating game elements such as points, levels, challenges, rewards, and competitions, educators create an interactive and challenging environment that stimulates students' active participation in their learning process. This strategy not only promotes motivation and engagement, but also develops skills such as critical thinking, problem-solving, and collaboration among students.

According to the experiences of Macías (2017), the tangible results obtained through the implementation of the Gamification strategy in the educational field are remarkable. In this case, specifically considering those obtained in Rezzly's virtual environment, where the adaptation of elements of the game enabled deep learning, the development of specific skills and collaboration between students. This approach led to the strengthening of mathematical competence and improvement in problem solving.

For example, in a gamified classroom, students can earn points for completing tasks and overcoming challenges, motivating them to work harder and stay engaged in their learning. In addition, gamification allows educators to personalize each student's learning experience, tailoring it to their interests, abilities, and pace of learning. Gamification in the classroom can motivate students by offering tangible and intangible rewards, such as points and recognition, for completing tasks and challenges, which can improve their engagement and effort in learning.

As Cortizo et al. (2011) point out:

> Our students dedicate a large part of their free time to video games, or other similar recreational activities, so being able to bring their training closer to the dynamics behind video games, can motivate them in their studies, promote healthy competitiveness among them, or even guide them in the learning processes.

In addition to improving student motivation and engagement, gamification can also have a positive impact on academic outcomes. Several studies have shown that students who participate in gamified learning

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experiences tend to show a higher level of academic achievement and higher knowledge retention than those who participate in traditional learning experiences. "Regarding the effects of Gamification on the didactic process, various studies have shown that this strategy increases students' grades and decreases the failure of subjects" (Johnson et al., 2014).

Coinciding with this statement, authors such as Macías (2017) support the effectiveness of gamification in the classroom to improve academic achievement and knowledge retention in students. "Gamification has been transferred to the didactic process with significant results in learning" (p.28). But it is also relevant to highlight that in gamification the role of the teacher is fundamental. Flandoli et al., (2018), underline the importance of the role of the teacher who acts as a "provocateur of discussions, facilitator of processes, counselor of the student and, in addition, is a catalyst of problems and conflicts in general. He must possess the necessary knowledge of the different resources, as he will be a permanent source of reference for his students" (p. 103).

In sum, gamification is a powerful tool that can transform the way teaching and learning takes place in the 21st century, by making learning more interactive, relevant, and motivating for students. By integrating gamification into the classroom, educators can create more meaningful and effective learning experiences that prepare students to succeed in an increasingly digitized and competitive world.

Figure 2

Gamification: Transforming Learning into a Game

Note: The graphic depicts how gamification turns learning into an interactive and engaging experience, encouraging the active participation of students in the acquisition of knowledge. Author: Rodolfo Jaime Silva Jurado (2024)

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Artificial Intelligence in Education: More Than a Tool

Artificial intelligence (AI), defined as "the incursion of machines capable of simulating some behaviors carried out by human beings classified as intelligent" (Begoña, 1992, p. 73), is having a significant impact on the educational field. This technological advancement goes beyond the mere interactivity and fun offered by gamification, by delving into data analysis, personalizing learning experiences, and providing immediate feedback. AI is radically transforming the paradigm of the traditional classroom by offering tools that enhance both teaching and learning. This shift drives a more dynamic and learner-centered education, where adaptability and personalization become critical to educational success in the digital age.

In recent decades, technological advancement in education has been very remarkable, especially with the integration of artificial intelligence (AI), which has been praised for its ability to transform teaching and learning. This integration manifests itself through a wide range of tools and approaches, from educational software to intelligent tutoring systems and interactive simulators, as highlighted by León Espinosa and García Valdivia (2008). AI's diversified presence in education reflects its ability to adapt to students' individual needs and enrich their educational experience.

It is important to note that the integration of AI in education is not intended to replace teachers, but to complement their work. This approach is based on the argument presented by Chacón and Limas (2019), who highlight the continued importance of the teacher in guiding educational processes. Teachers play a critical role in providing guidance, motivation, and emotional support to students, aspects that AI cannot yet fully replicate. In this sense, AI is conceived as an additional tool that enriches and transforms teaching by promoting a more dynamic and student-centered educational experience.

In addition, this innovative integration not only redefines the role of the teacher, but also fosters the development of cognitive skills and key competencies for the 21st century, thus adapting to the changing demands of today's educational environment. Collaboration between AI and educators allows for a more personalized, student-centered approach, where each student's strengths and weaknesses can be identified more accurately. In addition, the use of AI in the classroom can foster creativity, critical thinking, and problem-solving – essential skills for success in the digital age. Consequently, the integration of AI in education not only improves the efficiency of the educational process, but also provides a more personalized and student-centered approach, allowing educators to offer learning experiences more tailored to each student's individual needs.

For example, AI can be used to develop virtual tutoring systems that offer individualized assistance to students anytime, anywhere, as Salmerón et al., (2023) point out, "the configuration of virtual tutors enables real-time feedback, identifies common errors and allows students to resolve doubts 24 hours a day, thus improving their learning and academic performance significantly." In this way, these systems help reinforce the concepts taught in class, offer additional explanations and resolve doubts, which improves the understanding and retention of knowledge.

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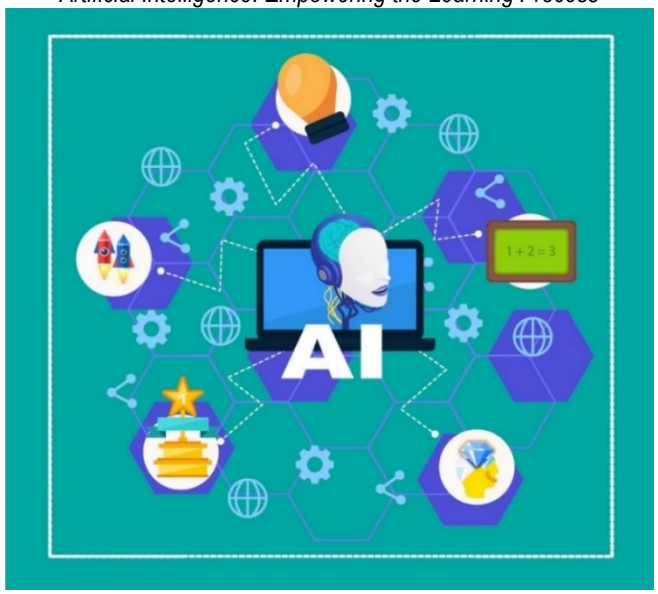
Figure 3
Artificial Intelligence: Empowering the Learning Process



Note: The figure shows how AI personalizes teaching and offers instant feedback, thus optimizing the learning process. Author: Rodolfo Jaime Silva Jurado (2024)

Art: A Bridge Between Culture and Learning

Art, since time immemorial, has served as a fundamental link between culture and learning. Throughout history, artistic expressions have reflected the beliefs, values, and experiences of human societies, passing on knowledge from generation to generation. From prehistoric cave paintings to contemporary masterpieces, art has been a powerful medium for exploring and understanding the world around us.

In education, art plays a key role in fostering creativity, critical thinking, and self-expression. Since ancient times, art has been a powerful tool used by human societies to communicate ideas, emotions, and values. Its importance lies in its ability to enrich learning and enhance multiple intelligences, according to Gardner (1995). Through art forms such as music, painting, dance, or theater, students have the opportunity to explore complex concepts and address difficult topics in accessible and meaningful ways. For Sánchez de Serdio (2010), "artistic practices that are integrated into pedagogy, even with a critical attitude, and that explore the complexities of the processes involved, allow us to glimpse spaces of possibility" (p. 13).

One of the main contributions of art to education is its ability to spark creativity in students. De Carvalho et al., (2021), highlight that "creativity is a very useful tool for meeting the educational needs of students, particularly in a social context such as the current one, of change and uncertainty about the future" (p. 117). In

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addition, it fosters aesthetic appreciation, empathy and collaboration, essential skills for active participation in contemporary society. This enriches the discussion on the benefits of art in the educational field.

In this sense, for the development of creative thinking, the authors suggest:

> Extensive use of creative techniques and skills is also highly recommended. In addition to the different creative techniques, the working methodologies of the sessions can also be different by resorting to drawing, movement, painting, imagination, personal expression, the construction of apparatus, the senses (smells, sounds, tastes, etc.), the creation of stories, etc. In particular, the students' real-life projects stand out for their value, in which they are involved during several sessions with different individual and group techniques (Carvalho et al., p. 176).

Moreover, art not only provides a medium for creative expression, but also acts as a bridge between cultures, connecting students to their cultural heritage and encouraging them to explore new perspectives. By immersing themselves in the various forms of art, students can understand and appreciate the different traditions and viewpoints that make up our diverse humanity. Romeu (2011) broadens this perspective by reflecting on how art does not follow a straight line, but introduces unpredictable elements capable of generating changes in the cultural environment (p. 130). Thus, art is not only limited to teaching concepts and techniques, but also promotes intercultural understanding and empathy, essential skills in an increasingly interconnected and globalized world.

In her reflections, Lourdes Palacios points out that "art, in this sense, occupies a role of utmost importance, given that it has the quality of connecting and engaging feelings, emotions and affections, humanizing the process of development of the learner in the depths" (Palacios, 2006, p. 42). This view is supported by Lotman (1999) who suggests that "art is the possibility of dialogue between the real and the other, which is not the unreal, but the different, the confrontational" (p. 204). In this way, art not only enriches the learning experience, but also prepares students to be global citizens capable of understanding and appreciating the complexity of the world around them.

In this way, art stands as an essential bridge between culture and learning, weaving deep connections between past, present, and future human experiences. From its historical roots to its contemporary relevance in education, art nurtures creativity, promotes intercultural understanding, and fosters vital skills for life in society. By empowering students to explore new perspectives and embrace diversity, art awakens not only the mind, but also the heart. Thus, as we cross the threshold of the classroom, art invites us to embark on a journey of discovery, where the possibilities are endless and the lessons are eternal.

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Figure 4
Art in Education: Fostering Creativity and Critical Thinking

Note: This image illustrates how art is a bridge between culture and learning, nurturing cross-cultural understanding and empowering students towards a continuous journey of discovery. Author: Rodolfo Jaime Silva Jurado (2024)

Conclusions

By exploring contemporary technological trends and their impact on different aspects of society, a dynamic and complex landscape emerges. From artificial intelligence to augmented reality, each technological breakthrough offers exciting opportunities and unique challenges. In this context, it is crucial to recognize the transformative role of technology and the arts in education.

While technological innovations promise to improve efficiency and accessibility in a number of areas, they raise ethical and societal questions that require urgent attention. Therefore, in order to fully embrace the digital future, it is essential to take a balanced approach that fosters responsible innovation and promotes inclusion and equality.

Moreover, the enduring value of the arts in education and culture should not be underestimated. Artistic expressions not only enrich our lives, but also play a critical role in developing critical skills, such as creativity, communication, and empathy, essential in a technology-driven world. They are also a powerful vehicle for preserving cultural identity and fostering intercultural understanding.

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In this sense, achieving global prosperity requires a collective commitment to collaboration, understanding, and informed action, involving government leaders, business leaders, educators, students, and professionals from various areas. In a world of rapid technological advancements, education must adapt to prepare future generations for a changing labor market, integrating the arts and technology to cultivate essential skills such as creativity and adaptability. Addressing the digital divide and ensuring equitable access to quality education are imperative. Fostering collaboration between educators, researchers, and private sector professionals will drive educational innovation and help meet the challenges of the 21st century, preparing future generations for a complex and technologically advanced world.

Reference

Begoña, G. (1992). La inteligencia artificial y su aplicaciόm en la enseñanza. *Comunicación, Lenguaje y Educación*, 13, 73–80. https://doi.org/10.1080/02147033.1992.10821001

Cortizo Pérez, J. C., Carrero García, F. M., Monsalve Piqueras, B., Velasco Collado, A., Díaz Del Dedo, L. I., & Pérez Martín, J. (2011). Gamificación y Docencia: Lo que la Universidad tiene que aprender de los Videojuegos.

Díaz, L. F. C., & Suárez, S. J. L. (2019). Los cursos virtuales orientados por competencias, una mirada hacia la pertinencia e innovación educativa y tecnológica del siglo XXI. *Edição/Edition*, *113*.

de Carvalho, T. D. C. M., de Souza Fleith, D., & da Silva Almeida, L. (2021). Desarrollo del pensamiento creativo en el ámbito educativo. *Revista Latinoamericana de Estudios Educativos* (Colombia), 17(1), 164-187. https://doi.org/10.17151/rlee.2021.17.1.9

Flandoli, A. M. B., Rogel, D. E. R., & Vivanco, J. C. M. (2018). El valor de la gamificación como herramienta educativa. *Gamificación en Iberoamérica*, 1(2), 6.

Gardner, H. (1995). "Multiple Intelligences" as a Catalyst. *The English Journal*, 84(8), 16–18. https://doi.org/10.2307/821182

González-Monteagudo, J. (2020). Reivindicación de la innovación educativa. *Praxis Pedagógica*, 20(26), 1-6, e-ISSN: 2590-8200. Recuperado de: https://doi.org/10.26620/uniminuto.praxis.20.26.2020.1-5

González, S. G. (2008). El saber de los claustros: las escuelas monásticas y catedralicias en la Edad Media. *Arbor*, 184(731), 443-455. https://doi.org/10.3989/arbor.2008.i731.195

Gross, B. (1992). La inteligencia artificial y su aplicación en la enseñanza. *Comunicación, lenguaje y educación*, 4(13), 73-80. https://doi.org/10.1080/02147033.1992.10821001

Johnson, L., Adams, B., Estrada, V., & Freeman, A. (2014). NMC Horizon Report:2014 Higher Education Edition. Austin, Texas, Estados Unidos: The New Media Consortium. https://doi.org/10.2791/83258

Espinosa, M., & Valdivia, Z. (2008). La inteligencia artificial en la informática educativa. *Revista de Informática Educativa y Medios Audiovisuales*, *5*(10), 11-18. https://www.researchgate.net/publication/266218766

Lotman, I. M. (1999). Cultura y explosión. Lo previsible y lo imprevisible en los procesos de cambio social. Editorial Gedisa. España.

Macías Espinales, A. V. (2017). *La Gamificación como estrategia para el desarrollo de la competencia matemática: plantear y resolver problemas* (Master's thesis, Universidad Casa Grande. Departamento de Posgrado). http://dspace.casagrande.edu.ec:8080/handle/ucasagrande/1171

Revista YUYAY, Estrategias, Metodologías & Didácticas Educativas ISSN: 2953-6685 e-ISSN: 2953-6677

Marenales, E. (1996). Educación formal, no formal e informal. *Temas para concurso de maestros*, 1-9. Consultado en http://www.inau.gub.uy/biblioteca/eduformal.pdf.

Menés González, R. Céspedes Acuña, E.J. Silva Elías, T. (2017). La formación estético-artística en la obra plástica: apuntes desde la Educación Inclusiva. *Revista de Educación Inclusiva*. Recuperado de: https://n2t.net/ark:/13683/pyNR/fPk

Padilla, R. D. M. (2019). La llegada de la inteligencia artificial a la educación. *Revista de Investigación en Tecnologías de la Información: RITI*, *7*(14), 260-270. https://doi.org/10.36825/RITI.07.14.022

Oliva, H. A. (2016). La gamificación como estrategia metodológica en el contexto educativo universitario. *Realidad y Reflexión*, 2016, Año. 16, núm. 44, p. 108-118. https://doi.org/10.5377/ryr.v44i0.3563

Sánchez, I. O. (2007). El tutor virtual: aportaciones a los nuevos entornos de aprendizaje. *Teoría de la Educación. Educación y Cultura en la Sociedad de la Información*, *8*(2), 100-115. http://hdl.handle.net/10366/56574

Palacios, L. (2006). El valor del arte en el proceso educativo. *Reencuentro. Análisis de problemas universitarios*, (46), 36-44. https://reencuentro.xoc.uam.mx/index.php/reencuentro/article/view/578

Pérez Gallardo, E., & Gértrudix Barrio, F. (2021). Ventajas de la gamificación en el ámbito de la educación formal en España. Una revisión bibliográfica en el periodo de 2015-2020. *Contextos educativos: revista de educación*.

Pimienta, S. X., & Mosquera-Martínez, M. L. (2021). Consideraciones curriculares, tecnológicas y pedagógicas para la transición al nuevo modelo educativo en el campo de la salud soportado por inteligencia artificial (IA). *Medicina*, *43*(4), 540-554. https://doi.org/10.56050/01205498.1644

Vila, R. R. (2002). *Las Nuevas Tecnologías aplicadas a la educación: elementos para una articulación didáctica de las Tecnologías de la Información y la Comunicación*. Marfil.

Romeu, V. (2011). Arte y reproducción cultural. *Estudios sobre las culturas contemporáneas*, (33), 113-139. http://www.redalyc.org/articulo.oa?id=31618563007

Salmerón Moreira, Y. M., Luna Alvarez, H. E., Murillo Encarnacion, W. G., & Pacheco Gómez, V. A. (2023). El futuro de la Inteligencia Artificial para la educación en las instituciones de Educación Superior. *Conrado*, *19*(93), 27-34. http://ref.scielo.org/89g6yc

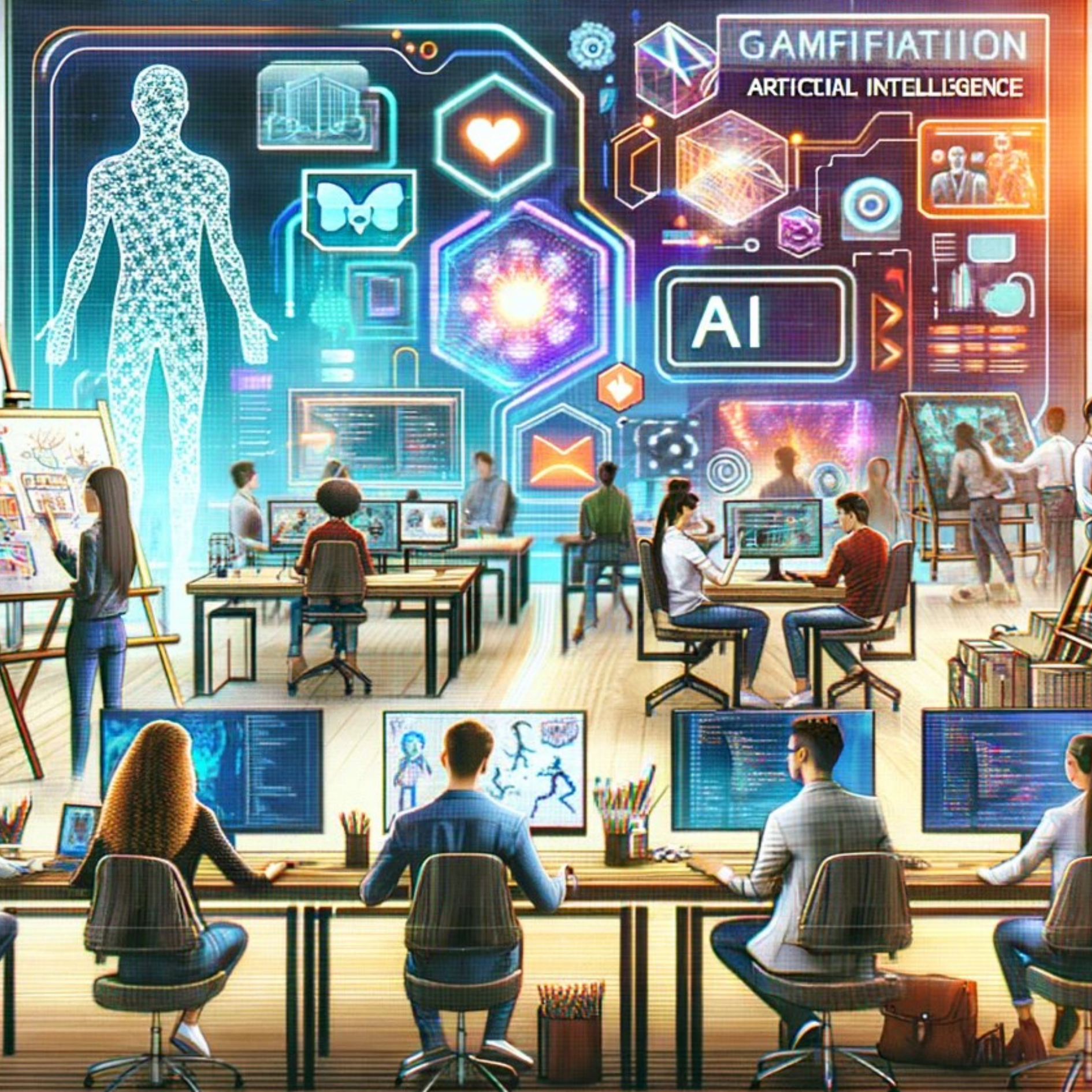
Sánchez de Serdio Martín, A. (2010). Arte y educación: diálogos y antagonismos. *Revista Iberoamericana de Educación (OEI), 2010, vol. 52, p. 43-60*. http://hdl.handle.net/2445/59348

Saona Lozano, R. V. (2019). *Percepciones de los docentes hacia la Inclusión Educativa en la Universidad de las Artes de Guayaquil* (Master's thesis). http://dspace.casagrande.edu.ec:8080/handle/ucasagrande/1927

Jurado, R. J. S., Jurado, D. J. S., Quinteros, J. M. B., & Jurado, M. D. S. (2022). Guía Didáctica de Herramientas Educomunicativas. *YUYAY: Estrategias, Metodologías & Didácticas Educativas*, *1*(1), A1-A22.

Werbach, K., & Hunter, D. (2012). Por la victoria: Como el pensamiento del juego puede revolucionar tus negocios. *Editorial Pearson Educación*.

Revista YUYAY, Estrategias, Metodologías & Didácticas Educativas ISSN: 2953-6685 e-ISSN: 2953-6677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Influence of the Teaching Perspective on the Relationship between Education and Society

(es) Influencia de la Perspectiva Docente en la Relación entre Educación y Sociedad
(port) Influência da Perspectiva Docente na Relação entre Educação e Sociedade

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Abstract

This essay examines the role of teacher perspectives in shaping the relationship between education and society, particularly within the "17 de Abril" Educational Unit in Quero Canton. It argues that teachers' active involvement and innovative methodological strategies are essential for fostering meaningful learning that meets contemporary societal challenges. Highlighting the dynamic interaction between education and society, the essay posits that understanding and leveraging teachers' perceptions and practices can offer valuable insights for designing pedagogical strategies that engage students effectively and align with societal needs and challenges. Through a comprehensive literature review and analysis of teacher surveys and interviews, the essay seeks to contribute to the debate on education's role in society, emphasizing the critical role of teacher perspectives in crafting educational practices that respond effectively to social challenges.

Keywords: Teacher perspective, strategies, methodologies, educational innovation.

Resumen

Este ensayo examina el impacto de la perspectiva docente en la relación entre educación y sociedad, con un enfoque específico en la Unidad Educativa "17 de Abril" en el Cantón Quero. Argumenta que la participación activa de los docentes y el uso de estrategias metodológicas innovadoras son esenciales para fomentar un aprendizaje significativo que responda a los desafíos sociales contemporáneos. Al destacar la interacción dinámica entre educación y sociedad, el texto sugiere que comprender y aprovechar las percepciones y prácticas de los docentes puede ofrecer perspectivas valiosas para diseñar estrategias pedagógicas que comprometan efectivamente a los estudiantes y se alineen con las necesidades y desafíos de la sociedad. A través de una revisión de literatura exhaustiva y el análisis de encuestas y entrevistas a docentes, el ensayo busca contribuir al debate sobre el papel de la educación en la sociedad, enfatizando el rol crítico de las perspectivas docentes en la elaboración de prácticas educativas que respondan eficazmente a los desafíos sociales.

Palabras clave: Perspectiva docente, estrategias, metodologías, innovación educativa.

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Resumo:

Este ensaio examina o impacto da perspectiva docente na relação entre educação e sociedade, com foco específico na Unidade Educacional "17 de Abril" do Cantão Quero. Argumenta que a participação ativa dos professores e o uso de estratégias metodológicas inovadoras são essenciais para promover uma aprendizagem significativa que responda aos desafios sociais contemporâneos. Ao destacar a interação dinâmica entre a educação e a sociedade, o texto sugere que compreender e aproveitar as perceções e práticas dos professores pode oferecer informações valiosas para a conceção de estratégias pedagógicas que envolvam eficazmente os alunos e se alinhem com as necessidades e desafios da sociedade. Através de uma exaustiva revisão bibliográfica e da análise de inquéritos e entrevistas a professores, o ensaio procura contribuir para o debate sobre o papel da educação na sociedade, enfatizando o papel crítico das perspetivas docentes no desenvolvimento de práticas educativas que respondam eficazmente aos desafios sociais. .

Palavras-chave: Perspectiva do professor, estratégias, metodologias, inovação educativa.

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Hypothesis

This essay explores how teachers' perceptions of education, and its societal impact can transform educational and social processes at the "17 de Abril" Educational Unit. It argues that teachers' active roles and innovative methodological strategies are essential for fostering meaningful learning that meets contemporary societal challenges. As education and society's intersection emerges as a vital study field in the 21st century, this essay aims to examine the influence of teacher perspectives on this relationship, particularly within the Quero Canton's "17 de Abril" Educational Unit.

Through this analysis, the essay seeks to understand how teachers' educational perceptions and practices can act as catalysts for social and educational change, marking a turning point in how education responds to the demands of an evolving society. Highlighting the evolution of the teacher's role from knowledge transmitter to learning facilitator, it suggests a dynamic interaction between education and society where the teacher plays a central role, not only in knowledge transmission but also in shaping critical, reflective, and committed citizens.

The central thesis posits that the teacher's perspective at the "17 de Abril" Educational Unit significantly affects the relationship between education and society, influencing both educational outcomes and the social development of Quero Canton. A thorough literature review on the relationship between education and society, the role of the teacher in contemporary education, and the effects of their perceptions on the educational process will support this thesis.

Additionally, a detailed analysis of data collected through surveys and interviews with teachers at the "17 de Abril" Educational Unit will explore their perspectives on education and its societal impact. This essay is structured around four main axes: the study's justification, highlighting the importance of investigating the teacher's perspective; the literature review, providing a theoretical framework for the analysis; the research methodology, describing the adopted qualitative and quantitative approach; and the discussion of findings, interpreting the data in the context of existing literature.

Through this analysis, the essay aims to contribute to the debate on education's role in society, emphasizing the teacher's perspective as a key element in designing educational practices that effectively respond to social challenges. Ultimately, it seeks to offer recommendations for educational policies and teaching practices that promote more inclusive, equitable, and relevant education for the 21st century.

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Justification

This study aims to examine the teachers' perspective at the "17 de Abril" educational unit in Quero Canton regarding education and society's impact on local development. It seeks to understand how, in current education, society is directly and indirectly involved across different educational levels, from early education to high school.

Additionally, this research will address the question of how learning processes are analogous across these levels, identifying the essential role of each educational level in this investigation. As teachers navigate daily through classrooms and society, the integration of knowledge and new learning methodologies will scaffold learning at each educational level, making it authentic and meaningful.

This indicates that the current educational system requires transformation, starting with our educational unit. According to Munita (2011), diverging opinions, discussions, negotiations, and the search and construction of consensus should be continuous classroom life processes, and the teacher's role in adopting and adapting various strategies to develop students' critical spirit is crucial for the evolution and development of individuals in our educational institution.

The aim is to shape the character, reason, and temperament of our students to engage and promote a social life with positive well-being factors, improvement, and personal progress, employing methodological strategies that motivate meaningful learning.

This descriptive research intends for students to perceive and enhance their educational reality at the "17 de Abril" educational institution, relying on new methodological strategies introduced by teachers and identifying the students' environment to optimize and enhance all educational processes. A primary goal is to establish strategies based on the student's environment, aligning with their needs to foster the development of logical and creative thinking, enhancing interpretative, argumentative, and propositional skills, and recognizing the path towards educational reforms in Ecuadorian legislation.

Contextualization

Ecuador's educational policies

Are characterized by their novelty and define an educational system with a distinct identity and personality. Rooted in its Constitution (Asamblea Constituyente, 2008), the guiding principle is inclusive, high-quality public education, closely integrated with its social characteristics. Data analysis suggests that Ecuador's educational policy has brought about significant changes in recent years (Ministerio de Educación, 2013), nearly achieving the EFA goals set for 2000-2015, in some cases even exceeding United Nations priorities (2000).

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The 2015 UNESCO report indicates that, with all Education for All (EFA) objectives measured by the 2012 EFA Development Index (EDI), only Cuba (0.981) was ahead, with Chile (0.969), Uruguay (0.969), Mexico (0.964), the Bolivarian Republic of Venezuela (0.956), and Ecuador (0.951) close to achieving them (UNESCO, 2015b, pp. 11-12). Among various targets, the notable aspect was that in 2006, according to the SERCE regional tests (UNESCO, 2008), Ecuador had lower learning outcomes compared to the rest of Latin America. By 2013, the TERCE tests (UNESCO, 2015) showed it as one of the most improved countries in the region (Araújo & Bramwell, 2015, p. 16), highlighting the international and regional interest in this educational system (Gascón et al., 2018).

Educational Quality

The quality of education, under continuous scrutiny, entails the evaluation of content, objectives, plans, etc., aiming to advance better education for new generations. It's crucial that while students receive schooling, educators also prepare themselves, as modern societies demand improvement from all to enhance educational quality.

The teaching-learning relationship should involve two key figures: the educator and the learner, including the entire educational community. The underlying theme is the communication between these points, assuming a balance when the communication is bidirectional or horizontal. So far, the term "educational horizontality" is most used.

The way communication is conducted in schools ensures that students can truly own the knowledge, reflecting genuine understanding from the moment they realize what they know is indeed knowledge. Bruner argues that "there are two modes of cognitive functioning, two modes of thought, each providing characteristic ways of ordering experience, of constructing reality" (Bruner, 2004), suggesting languages are directly linked to humans' ways of knowing, as objective communication shapes thought structures.

Knowledge Society

The "Knowledge Society," according to the 2005 UNESCO World Report "Towards Knowledge Societies," indicates that new information and communication technologies have created conditions for the emergence of knowledge societies, serving as a medium for achieving desirable development, especially for developing countries (UN, 2005). UNESCO views access to education, information, and freedom of expression as knowledge society pillars. Moreover, the knowledge society contributes to economic growth and the development of all societal sectors from a human perspective.

The 2005 World Summit on the Information Society stated that the knowledge society should be seen not just as seeking new communication methods but as sharing knowledge, considering societies' plurality, heterogeneity, and cultural diversity (World Summit on the Information Society, Geneva 2003 - Tunis 2005). The

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importance of education and access to informational networks characterizes the knowledge society, forming the main resource for creating competent citizens in a globalized world. Knowledge has always been part of economic processes, only now becoming central to wealth production (Vivas, 2012).

Characteristics of the Knowledge Society

This society type contributes to knowledge as a fundamental aspect of human life, highlighting economic, labor, educational, cultural, and communicative activities requiring cognitive and mental competencies. Manuel Castells notes that innovation capacity is a primary feature of knowledge societies, transforming processes and generating changes. He identifies two knowledge types within companies: tacit, from workers' labor experience, and explicit, corresponding to formal management processes (Vivas, 2012).

The Role of Teachers in Society

To prepare and motivate young people to face an increasingly competitive society, at national, organizational, and individual levels, teachers must act as facilitators. They should prepare students for a world of creativity and flexibility while protecting them from competition threats in today's society. Teachers should encourage students to recognize the competitive reality of society, understanding the importance of achieving higher education levels. Simultaneously, teachers should support and facilitate their education through learning, preparing them successfully for higher education. Learning is a complex process involving many variables, with teachers assisting and supporting students' learning, including external and internal aspects underlying the learning process, understood, and assumed by teachers in their facilitator role (Pedraja Rejas 2012).

Literature Review

Education is fundamental for societal development and transformation, acting as a bridge between acquired knowledge and its everyday application. The review emphasizes that, since the Greek era with philosophers like Aristotle and Plato, knowledge has been considered a reason-based experience vital for approaching truth. Educational institutions face the challenge of adapting to new societal demands, transforming their formative visions to foster research and meet these new requirements. Such change is crucial for building societies through education, highlighting the need for a shift towards more critical and reflective educational approaches.

The role of teachers in addressing the social, economic, cultural, and technological challenges of the 21st century is central to forming citizens capable of tackling these challenges. Educators must adapt and respond to the needs of an ever-changing world, promoting learning that integrates technology, creativity, and critical thinking. Integrating ICTs in education is key to maintaining the educational system's relevance in the information society. The ability to innovate and adapt to new learning and teaching methods is essential for preparing students for the future.

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The transformation of educational models is necessary to meet the demands of a globalized society. This change involves not only the inclusion of new technologies and teaching methods but also a reevaluation of the role of educational institutions in promoting knowledge and research. The "Knowledge Society" is characterized by the preeminence of education and access to information as primary resources, with knowledge at the core of wealth production, underscoring the importance of inclusive and quality education.

Teachers, as knowledge facilitators, bear the responsibility of preparing students for a competitive society, fostering learning that enables them to understand and face current societal challenges. Quality education in Ecuador aims to meet the demands of a constantly changing society, focusing on inclusion, equity, and innovation. Efforts to improve educational quality are crucial for achieving sustainable and equitable development.

To theoretically underpin the research, a comprehensive literature review was conducted through academic databases like Scielo, Redalyc, Dialnet, Google Scholar, and the Ibero-American Journal of Education. Key terms related to "education" and "society" were used to filter relevant articles. This search was conducted in both Spanish and English, without limiting the results by publication year, ensuring a broad and diverse understanding of the topic.

Selected articles had titles reflecting the search terms and were available in full text. Conference papers, digital newspapers, theses, Wikipedia, monografias.com, and book reviews were excluded to maintain a high academic standard. Additionally, the reference lists of identified articles were examined to deepen the investigation, focusing on the relationship between education and society from the teacher's perspective and how teachers perceive society's impact on the educational process of the learner.

Teacher Perceptions Analysis

Although the document does not provide specific details on the methodology for collecting and analyzing teachers' perceptions, typically this component would involve designing and distributing surveys to teachers. These surveys would aim to assess their opinions and perceptions regarding the influence of society on education and their role within this process. The data gathered through these surveys would be analyzed either qualitatively or quantitatively (depending on the research approach) to draw relevant conclusions about how teachers perceive their impact on students' education and society at large.

Discussion

Society's Impact on School: It highlights the importance that society, including families and the community at large, places on education. There is an expectation that the school will optimally fulfill its educational task, with a marked desire for children to continue their studies and become professionals. Society

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values the school positively despite recognizing its shortcomings, such as the scarcity of resources and insufficient infrastructure.

Differential Perception of Teachers: Teachers perceive that society places little importance on the school, in contrast to the high valuation they themselves attribute to it. This disagreement between the perceptions of different actors suggests a disconnection regarding family involvement in the educational sphere, where teachers consider families to be minimally participative and show disinterest in their children's learning processes.

Hypothetical Considerations for Reflection: The discussion raises the need to analyze how educational management and the characteristics of the educational project can influence the community's perception of the school. Furthermore, it emphasizes the importance of delving into the study of family participation and its commitment to the educational process, given that the valuation of education varies according to social classes and contexts.

Conclusion

This proposal emphasizes the crucial need to value and strengthen the role of teachers as agents of change at the intersection of education and society. It highlights the importance of adopting pedagogical strategies that promote meaningful learning, placing the teacher's perspective and experience at the center of the educational process as a fundamental catalyst for both educational and social transformation.

The review reveals that although society recognizes the importance of education, it often underestimates the value of the school and the active and critical participation of teachers in educational development. On the other hand, a differential perception by teachers was identified, who feel that their importance and contribution to the educational process are not fully valued by society. This discrepancy underscores the need for closer dialogue and collaboration among all actors involved in education: teachers, students, families, and the community at large.

To address these challenges, an integrative approach is proposed that not only recognizes but also enhances the role of teachers as essential mediators between knowledge and students. This approach requires innovative pedagogical strategies that foster curiosity, critical thinking, and the ability of students to apply their learning in real and varied contexts, thus preparing them to effectively contribute to society.

Finally, it is necessary to underline the importance of considering and valuing teachers' perspectives in the creation of educational policies and pedagogical practices that respond to the current needs of society. The urgency of adopting a collaborative and reflective approach in education is highlighted, one that truly recognizes and utilizes the potential of teachers to influence and transform society through education.

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Reference

Barrera Erreyes, H. M., Barragán García, T. M., & Ortega Zurita, G. E. (2017). La realidad educativa ecuatoriana desde una perspectiva docente. *Revista iberoamericana de educación*.

De la Herrán Gascón, A., Cedeño, A. I. R., & Lara, F. L. (2018). Claves del cambio educativo en Ecuador. *Foro de Educación*, *16*(24), 141-166.

de Moreno, I. F. (2009). La sociedad del conocimiento. *Revista Científica General José María Córdova*, *5*(7), 40-44.

Escribano Hervis, E. (2017). La educación en América Latina: desarrollo y perspectivas. *Actualidades Investigativas En Educación*, *17*(2). https://doi.org/10.15517/aie.v17i1.28147

Flórez Romero, M., Aguilar Barreto, A. J., Hernández Peña, Y. K., Salazar Torres, J. P., Pinillos Villamizar, J. A., & Pérez Fuentes, C. A. (2017). Sociedad del conocimiento, las TIC y su influencia en la educación.

Herreras, J. V. (2012). Educación y conocimiento: el problema del conocer en la escuela/Education and knowledge: the problem of to know in the school. *Sophia. Colección de Filosofía de la Educación*, *13*. https://doi.org/10.17163/soph.n13.2012.09

Isch, L. (2011). Las actuales propuestas y desafíos en educación: el caso ecuatoriano. *Educação & Sociedade*, *32*, 373-391. https://doi.org/10.1590/S0101-73302011000200008

León, A. (2007). Qué es la educación. *Educere*, *11*(39), 595-604.

Montero, L., & Gewerc, A. (2018). La profesión docente en la sociedad del conocimiento. Una mirada a través de la revisión de investigaciones de los últimos 10 años. *Revista de Educación a Distancia (RED)*, (56).

Munita, M. G. (2012). La práctica profesional como problema de aprendizaje: orientaciones para la aplicación de un modelo de desarrollo de competencias. *Foro educacional*, (20), 109-142.

Ottone, E., & Hopenhayn, M. (2007). Desafíos educativos ante la sociedad del conocimiento. *Pensamiento Educativo, Revista de Investigación Latinoamericana (PEL)*, *40*(1), 13-29.

Pedraja Rejas, L. (2012). Desafíos para el profesorado en la sociedad del conocimiento. *Ingeniare. Revista chilena de ingeniería*, *20*(1), 136-144. http://dx.doi.org/10.4067/S0718-33052012000100014

Pérez Zúñiga, R., Mercado Lozano, P., Martínez García, M., Mena Hernández, E., & Partida Ibarra, J. Á. (2018). The Knowledge Society and the Information Society as the cornerstone in educational technology innovation. *RIDE. Revista Iberoamericana para la Investigación y el Desarrollo Educativo*, *8*(16), 847-870.

Suasnabas-Pacheco, L. S., & Juárez, J. F. (2020). Calidad de la educación en Ecuador.¿ Mito o realidad?. *Dominio de las Ciencias*, *6*(2), 133-157.

Villarroel Rosende, G., & Sánchez Segura, X. (2002). Relación familia y escuela:: un estudio comparativo en la ruralidad. *Estudios pedagógicos (Valdivia)*, (28), 123-141. http://dx.doi.org/10.4067/S0718-07052002000100007

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(port) Inteligência Artificial para Produção Musical (IAPM): Pedagogia e Ensino por meio de Estratégias Tecnológicas Inovadoras.

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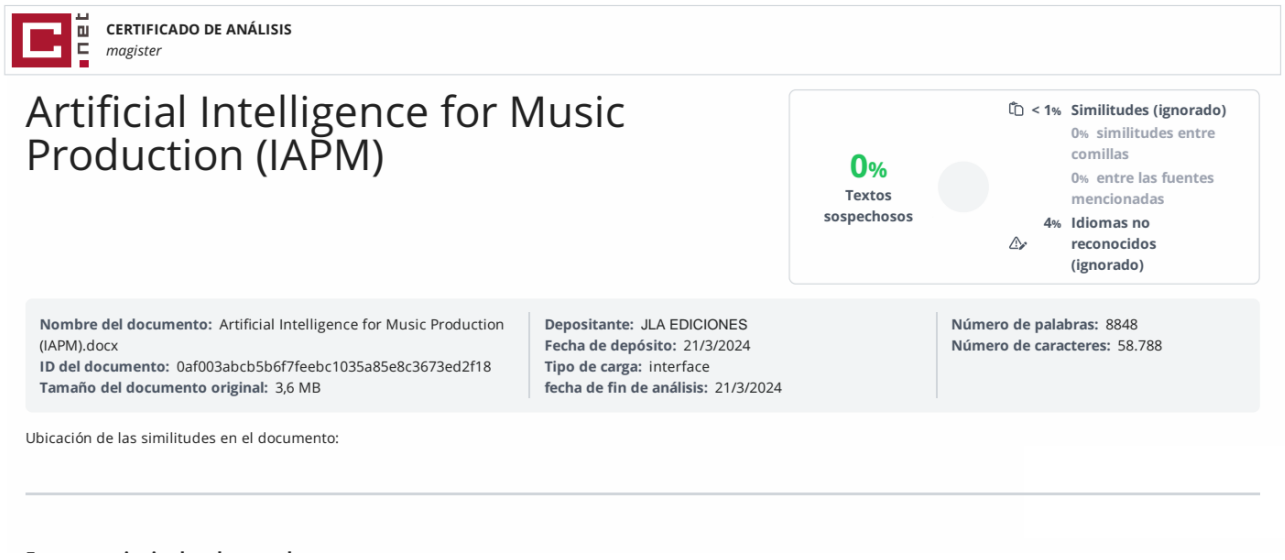

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Resumen

Desde su creación, la producción musical ha tenido un vínculo estrecho con la tecnología, existe gracias a ella. Por ello, los cambios tecnológicos redundan en los modos de grabar música y en la estética del audio. Ahora bien, ¿cómo opera la emergente inteligencia artificial (IA) en la producción musical? ¿Qué alternativas tienen las instituciones y los profesionales que se dedican a la enseñanza del audio frente a la consolidación de la inteligencia artificial para la producción musical (IAPM)? El objetivo de este ensayo es analizar el impacto de la IA desde la intersección de la educación, producción musical y nuevas tecnologías. Se realizó un estudio exhaustivo cuya metodología incluyó revisión bibliográfica, entrevistas a especialistas del audio y la aplicación de algunas tecnologías de IAPM. A partir de este enfoque, se ha procurado comprender cómo las estrategias tecnológicas están transformando la enseñanza de la producción musical. Dentro de los resultados que se presentan, se revela que la discusión sobre música, computadoras e inteligencia artificial lleva casi setenta años; sin embargo, actualmente es un campo emergente en constante evolución. Se ha señalado el rol de las instituciones que imparten esta disciplina y la integración de la inteligencia artificial para la producción musical en sus programas académicos. De esta manera, se aspira a potenciar la sostenibilidad y eficacia de la enseñanza para la producción musical. Igualmente, se subraya el nuevo rol del docente, quien podrá fungir como tutor, curador y asesor de los estudiantes con el uso de IAPM.

Palabras clave: Educación; producción musical; inteligencia artificial; innovación educativa.

Abstract

Since its inception, music production has had a close relationship with technology; it exists thanks to it. Therefore, technological changes have an impact on the ways music is recorded and on the audio aesthetics. Now, how does emerging artificial intelligence (AI) operate in music production? What alternatives do institutions and professionals dedicated to audio teaching have in the face of the consolidation of artificial intelligence for music production (IAPM)? The objective of this essay is to analyze the impact of AI from the intersection of education, music production, and new technologies. An exhaustive study was conducted, which included bibliographic review, interviews with audio specialists, and the application of some IAPM technologies. From this approach, we have sought to understand how technological strategies are transforming the teaching of music production. Among the results presented, it is revealed that the discussion about music, computers, and artificial intelligence has been going on for almost seventy years; however, it is currently an emerging field in constant evolution. The role of institutions that teach this discipline and the integration of artificial intelligence for music production into their academic programs have been highlighted. In this way, the aim is to enhance the sustainability and effectiveness of teaching for music production. Similarly, the new role of the teacher is emphasized, who will be able to act as a tutor, curator, and advisor to students through the use of IAPM.

Keywords: Education; music production; artificial intelligence; educational innovation.

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Resumo:

Desde a sua criação, a produção musical tem uma ligação estreita com a tecnologia, existe graças a ela. Portanto, as mudanças tecnológicas afetam as formas de gravação de música e a estética do áudio. Agora, como funciona a emergente inteligência artificial (IA) na produção musical? Que alternativas têm as instituições e profissionais dedicados ao ensino de áudio diante da consolidação da inteligência artificial para produção musical (IAPM)? O objetivo deste ensaio é analisar o impacto da IA a partir da intersecção da educação, da produção musical e das novas tecnologias. Foi realizado um estudo exaustivo cuja metodologia incluiu revisão bibliográfica, entrevistas com especialistas em áudio e aplicação de algumas tecnologias do IAPM. A partir dessa abordagem, buscamos compreender como as estratégias tecnológicas estão transformando o ensino da produção musical. Dentro dos resultados apresentados, revela-se que a discussão sobre música, computadores e inteligência artificial já se arrasta há quase setenta anos; No entanto, é atualmente um campo emergente em constante evolução. Tem sido destacado o papel das instituições que ministram esta disciplina e a integração da inteligência artificial para a produção musical nos seus programas académicos. Desta forma, pretende-se potenciar a sustentabilidade e a eficácia do ensino da produção musical. Da mesma forma, destaca-se o novo papel do professor, que pode atuar como tutor, curador e orientador dos alunos com a utilização do IAPM.

Palavras-chave: Educação; produção musical; inteligência artificial; inovação educacional.

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Planteamiento[1]

Con la aparición en internet de ChatGPT en 2022,2 se ha discutido en medios de comunicación, redes sociales y congresos, la pertinencia, fortalezas, debilidades y amenazas de la inteligencia artificial (IA). Desde el sistema educativo, hay dos puntos que se debaten. El primero, la IA como parte integral de los nuevos modelos pedagógicos, en los cuales la tecnología y la computación tienen un papel fundamental (Ros-Fábregas, 2023; Deruty et al., 2022). Otra línea, que considera la IA como el fin de la enseñanza tradicional mediada por el docente, la amenaza en puestos de trabajo y la transferencia de datos privados. (Reje, 2022; Born et al., 2021). El informe de Born et al. (2021) contiene datos estadísticos sobre el impacto de la IA en la circulación y consumo de la música. El documento sustenta, con datos empíricos, las razones por las cuales el Estado debe regular y controlar la IA, justificado desde la protección del consumidor. A modo de curiosidad, la misma autora criticó, hace veintinueve años, el proteccionismo del Estado en las producciones artísticas y culturales que realiza el IRCAM en París. (Born 1995).

Históricamente, la enseñanza de la música ha estado condicionada por la relación entre maestro y discípulo, sistema de enseñanza por imitación. Por ello, en música se habla de "escuelas de enseñanza o estilo" de un compositor, intérprete o país, porque se sostiene la idea de que cierta manera de tocar o escribir música mantiene una línea estilística que ha pasado de generación en generación por vía oral, aunque luego aparezcan tratados teóricos y métodos pedagógicos que legitiman la tradición (Stypulkowski, 2020; Dirst, 2012). Incluso, en música popular, los intérpretes aprenden a tocar sus instrumentos a través de la imitación, reproducen instintivamente lo que se escucha a partir del soporte de una grabación o video. La IA confronta estos modos de hacer y producir música. El debate sobre la inteligencia artificial en educación y artes es relativamente nuevo en lengua castellana y que esté habiendo eco en algunas revistas, como Nierika de la Universidad Iberoamericana de México o la F-Ilia del Instituto Latinoamericano de Investigación en Artes de la Universidad de las Artes, Ecuador, es una buena noticia. Como presentaremos más adelante, en lengua inglesa el debate está abierto desde hace varias décadas.

A diferencia del debate presentado desde la educación, la industria discográfica ha reconocido en la IA un recurso inigualable. La industria del disco existe gracias a la tecnología de la grabación, un mundo articulado por ingenieros de audio, científicos, técnicos, músicos y gestores; todos han coexistido y sobrevivido a los cambios que se han producido en la tecnología del audio. La aparición de la IA, lejos de ser un obstáculo, es el nuevo objetivo que se han trazado las grandes corporaciones discográficas, como Sony, Warner y Universal, quienes invierten dinero y tiempo en desarrollar inteligencia artificial para la producción musical (IAPM). Por ejemplo, el Sony CSL Research Laboratory es un departamento exclusivo para desarrollar tecnología para la

[1] Este trabajo forma parte del proyecto "(Inter)subjetividades y (de)construcción sonora. Estudios sobre síntesis, acústica y la musicología de la grabación y la performance". Código: VPIA-2023-15-PI. Adscrito al Grupo de investigación S/Z de la Universidad de las Artes, Guayaquil.

[2] ChatGPT son las siglas de *Chat Generative Pre-Trained Transformer*. Disponible en línea: https://www.chat.openai.com.

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producción y comercialización de audio. Entre otros softwares, han desarrollado Flow Machines, programa de composición asistida que modifica el sonido a partir de las sugerencias del usuario. [3]

La primera en conseguirlo tendrá los derechos de la patente durante sesenta años. La competencia por las patentes ha sido parte de la industria discográfica desde su origen. La primera compañía en controlar una patente de formatos, equipos o software tiene el monopolio en procesos de producción, tecnología de reproducción. Véase: Hatschek y Wells (2018). En la producción musical, cada nueva tecnología modifica el resultado del audio y el flujo de trabajo. Ante este panorama, ¿cuál es el rol de los centros de enseñanza de educación superior que ofrecen la carrera de producción musical? ¿Cómo se articula, dentro de un proceso tradicional de enseñanza-aprendizaje, la aparición de la IAPM?

Para dar respuesta a estas interrogantes, el presente ensayo se ha estructurado en tres partes: en la primera, se presenta un resumen de la pedagogía en la producción musical; luego, un panorama de la IAPM, su asimilación en la industria del fonograma y su impacto en los modos de hacer y producir música. Por último, se expone el cambio de paradigma pedagógico del docente frente a las IAPM y los desafíos que enfrenta el modelo de educación musical tradicional en el aprendizaje de la producción musical.

En el ámbito metodológico, se realizó una revisión bibliográfica en la cual se constató que, en lengua inglesa, la discusión sobre música, computación e IA tiene varias décadas; caso contrario en lengua española, donde el debate es reciente. Los contenidos encontrados se dividieron en tres categorías: producción musical e IA, incorporación de la IA a la industria discográfica y las implicaciones en los modelos pedagógicos. Se realizó una escucha de álbumes que han sido producido con IA y se sintetizaron en este trabajo los aspectos que se consideraron pertinentes, como el compromiso de la industria de la música con la tecnología y la práctica docente. Se realizó una búsqueda informática a través de internet y teléfonos móviles, en donde se constató un gran número de aplicaciones de IAPM. Además, se entrevistaron a cuatro productores musicales y cinco DJ. A los productores se le sometió a una escucha crítica de las grabaciones hechas con IAPM, y todos coincidieron en que el resultado de la grabación era clichés de la industria musical, pero nunca distinguieron cuál grabación se hizo con IA y cuál no. Los DJ reconocieron usar IA en sesiones en vivo y que el público no notaba la diferencia cuando era una mezcla humana y cuando no.

Desarrollo

Producción musical y pedagogía

La producción musical como proceso pedagógico es de reciente creación. El productor musical conocía su oficio siendo aprendiz dentro de los estudios de grabación. El día a día, la constante práctica, el ensayo y error, las experiencias vividas y compartidas, hacían que el productor musical dominara el arte de producir un

[3] Disponible en https://flow.machines.com.

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fonograma (Cheung-Ruiz y Pérez-Valero, 2020). El cambio tecnológico de la grabación y producción no ha sido un problema; al contrario, es la constante desde el inicio de la era fonográfica. La industria del disco es fiel al axioma de transformarse o morir. En este sentido, la adquisición de la tecnología ha sido el principal inconveniente, no la capacidad de adaptación.

A diferencia de la música, cuya permanencia está refrendada por estudios musicológicos, la producción musical tiene un vacío teórico que se ha ido llenando en los últimos años a través de la musicología para la producción musical o del fonograma; es decir, la unión entre musicología y producción musical ha sido por medio de los rigores metodológicos de la primera y las destrezas técnicas y resultados sonoros de la segunda (Zagorsky-Thomas, 2014; Juan de Dios Cuartas, 2016; Moylan, 2020; Pérez-Valero, 2022; Di Cione, 2023; Caballero Parra, 2023).

La educación del productor musical era un proceso vivencial, práctica constante dentro del estudio de grabación donde se adquiría el conocimiento técnico y estético del fonograma. Con el asentamiento del oficio dentro del claustro universitario, se sumó la tarea de sistematizar, a través de métodos, didácticas y pedagogías, aspectos que se adquirían con una rutina al lado del ingeniero de audio. De esta forma, en el día a día se aprendían los procesos de mezcla, el procesamiento de señal de audio, eliminación de ruido y la optimización de la grabación durante la masterización.

De igual modo, en las últimas décadas se ha vinculado la carrera del productor musical con la academia para otorgar un diploma de grado universitario, aumentando las universidades que certifican el oficio. Esto ha pasado en otras carreras, como las artes escénicas, el diseño de modas o la orfebrería. Algunas carreras que hoy tienen tradición académica comenzaron como un oficio que, en algunos casos, se consideraban inferiores, como lo eran en el siglo XVI la odontología o la cirugía general. En Latinoamérica hay una gran oferta: Instituto Tecnológico Metropolitano de Medellín, Colombia; Tecnológico de Monterrey, México; Universidad Federal Fluminense en Brasil; Universidad de Palermo, Argentina. En el caso de Ecuador destacan la Universidad San Francisco de Quito, la Universidad de Especialidades Espíritu Santo, la Universidad de las Américas y la Universidad de las Artes, por citar algunas instituciones. La oferta es mayor si se incorporan los institutos tecnológicos, academias privadas y otras universidades que ofrecen la carrera en modalidad online.

El desarrollo de la carrera dentro de la universidad sucedió cuando el acceso a la tecnología de la grabación se abarató. Hace cuarenta años era imposible para una persona comprar equipos de grabación, como las que tenía un gran sello discográfico. Solo el equipamiento acústico, sin ningún objeto o herramienta tecnológica, era inaccesible sin un crédito que podía no recuperarse. El gradual acceso a la tecnología a partir de la era digital ha permitido que, con software gratuitos, una interfaz económica y un micrófono de gama media, se puedan hacer producciones nada desdeñables. De hecho, algunos programas como Cubase, FL Studio o Ableton Live poseen interfaces con las cuales cualquier individuo, con una mínima sensibilidad y gusto, puede hacer una producción sin necesidad de conocer los rudimentos teóricos de la música, los signos de notación musical e, incluso, sin saber tocar un instrumento. Esto ha traído algunas críticas dentro del gremio de la música

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académica tradicional, en donde la enseñanza individualizada de un instrumento requiere cerca de diez años de vida. El tiempo de estudios depende del instrumento y varía de acuerdo con el sistema educativo, el país, la institución y las habilidades del músico. De este modo, la tecnología acortó el período de tiempo para hacer música.

El acceso a los equipos ha permitido que se abran carreras universitarias de producción musical. De hecho, la misma industria ha ampliado la noción de lo que es producir música, involucra al DJ, un diseñador sonoro, técnicos de sonido en vivo, entre otros. El DJ era una mediación, el realizador por antonomasia del mash-up: dos grabaciones similares en tempo y tonalidad eran sincronizadas por el DJ, se superponía en un punto determinado de ambas grabaciones y se generaba la magia del DJ: una tercera obra, resultado de dos que ya existían. Con la IAPM, no solo se hace más rápido, sino que temas que hace años eran incompatibles, la IA las puede hacer coincidir inmediatamente (Gunkel, 2008). ¿No es acaso el fin último de la producción hacer una música que suene y quede fijada dentro de un fonograma? Mientras este dilema sigue sin resolverse, ha aparecido la inteligencia artificial para la producción musical.

Modos de enseñar, producir y procesar información están cambiando con la IA. En el ámbito musicológico, a través de tecnologías que se relacionan, como Optical Character Recognition (OCR) y Optical Music Recognition (OMR), se reconstruyen fragmentos de música que estaban perdidos o eran ilegibles (Ros-Fábrega, 2023). Asimismo, la IAPM abre un abanico de posibilidades que solo se verán refrendadas en el fonograma final cuando el productor musical tome las decisiones a partir de lo que ofrece la IA (Moffat y Sandler, 2019).

La IA es el resultado de un largo proceso de invención tecnológica que se ha articulado con la creación artística. En 1949, Robert Bussa desarrolló el Index Thomisticus, con el cual se iniciaron las Humanidades Digitales, una compilación de largo aliento en el que la computadora tuvo el rol protagónico.[4] En esta misma línea, Barry S. Brook propuso en 1966 la RILM Abstracts of Music Literature, iniciativa semejante al proyecto de Bussa, pero centrado en la música y que contó con el apoyo del Graduate Center de The City University of New York.[5] Ambos proyectos no son programas en el sentido estricto del término, pero inician la era de trasladar la producción intelectual y artística del soporte físico a digital.

El debate sobre música, tecnología e IA tiene setenta años. En 1953, Dietrich Prinz hizo la síntesis sonora de melodías y ritmos al azar generados por computadora; además, sonaba y se hacía tangible en la realidad acústica (Cetta, 2018). Algunos programas de composición algorítmica se hallan desde 1955, como OM (OpenMusic),[6] desarrollado actualmente por el IRCAM, siglas en francés del Institut de Recherche et Coordination Acoustique/Musique, fundado en 1970 por el célebre compositor y director Pierre Boulez (1925-2016); y que abre posibilidades en donde el azar, a través de los algoritmos generan los materiales musicales.

[4] https://www.corpusthomisticum.org/it/index.age.
[5] https://www.rilm.org/abstracts/
[6] OpenMusic es un software gratuito y libre. Disponible en https://forum.ircam.fr/projects/detail/openmusic/.

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Esto ha traído la aplicación sistemática de la tecnología para la creación musical. Al no tener controlados los resultados estéticos, se acuñó el término "música experimental" a toda música hecha con computadoras (Hiller e Isaacson, 1959); aunque, como veremos más adelante, el resultado musical de la IAPM no se incorpora a lo experimental-sónico; por el contrario, es mainstream de la música pop.

En tal sentido, Dugan (1975) había presentado avances de la mezcla de audio a través de procesos automáticos. Si bien el investigador estaba frente a una incipiente IA, el estudio analizaba las posibilidades informáticas en donde una máquina tomaba decisiones en lo que era uno de los principales roles del productor musical, la mezcla de la grabación. Actividad que ha pasado del oído del productor, a los programas informáticos. Sheridan y Verplank (1978) desarrollaron prototipos de interacción entre humanos y computadoras, buscando obtener resultados automatizados a partir de estadísticas que reemplazarían las capacidades ordinarias de comunicación.

Road (1980) había previsto las ventajas de la IA en música y se preocupó por los protocolos metodológicos para la producción de audio y síntesis. Este tipo de investigación halló eco años después en el trabajo de Russel y Norvig (1995), en donde perfilaron los alcances, límites, repercusiones y miedos de una IA. Por su parte, Miranda (2000) consideró los posibles impactos psicológicos en usuarios de IAPM. Si bien para la fecha fue un ejercicio de especulación en torno a la tecnología del momento, centra la atención en el usuario, porque aún la IAPM necesita la interacción con humanos.[7]

El usuario también fue el centro de atención de Schedl et al. (2016). Los autores estudiaron cómo la IA se convirtió en una comunidad virtual, con alcance e interacción en plataformas y redes sociales. En algunos casos, el resultado estético de la música era determinado por la relación entre usuarios y probabilidades estadísticas. Esto no es menor, la IA ha redefinido los modelos de creatividad y genera expectativas en un entorno de géneros musicales conocidos. La música popular ha estado mediada por la tecnología y la IA no es una excepción.

IAPM e industria discográfica

La industria discográfica es un mundo en permanente transformación: de la grabación acústica (1878) ha pasado a la grabación eléctrica (1920) y luego a la digital (1990). Ha sobrevivido a los cambios de formato del soporte, del disco de 78 rpm, al de 33 1/3, el casete, el disco compacto y ahora las plataformas streaming. La asimilación de la IAPM es parte de este proceso y la industria invierte para ofrecer un nuevo medio de producción para profesionales y aficionados.

[7] Una actualización de este tema lo hallamos por el mismo autor en el número especial de la revista *Arts* (2019) (8) 4. Disponible: https://www.mdpi.com/2076-0752/8/4/130.

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Las tres majors internacionales, Sony, Warner y Universal Music, cuentan con laboratorios dedicados al desarrollo de la IAPM. Además, han hecho lanzamientos discográficos en los cuales se publicita el uso de la IAPM como estrella del disco. Taryn Southern sacó el álbum I AM AI (2018) y, en el mismo año, Sony hizo un disco compuesto por una IA: Hello World (2018) de Skygge y producido por Benoit Carré. Este último explicó que la IA fue un miembro más del equipo de trabajo (Avdeeff, 2019). Al año siguiente, Holly Herndon aparece con Proto (2019), otro álbum publicitado como el resultado de la interacción entre humanos e IAPM. Lo interesante de estas propuestas es que la IAPM es un medio para la grabación, no el resultado exclusivo.

Moffat y Sandler (2019) han señalado tres aspectos que interrelacionan lo humano con la IA. En primer lugar, el ingeniero de audio controla la información que necesita la IAPM; por ahora, es el primer punto de control. Segundo, el ingeniero es quien decide si incorpora o no el resultado que da la IA. Por último, a pesar del resultado que ofrezca la IA, el ingeniero puede intervenir manualmente el audio. De esta manera, la IAPM interactúa en diferentes niveles, pero el ingeniero de audio controla y selecciona los resultados que desea obtener. Si bien aún el humano es parte del proceso, gradualmente la IAPM podría reafirmar ciertas reglas y convertirlos en procesos automatizados. Ha habido intentos, aunque más como publicidad que como hechos reales.

En abril de 2023, un compositor fantasma declaró a los medios de Estados Unidos que la grabación de “Heart on my Sleeve” de Drake y The Weeknd había sido compuesta por una IA. Esto generó un presunto cisma sobre la IA como generadora de material musical para artistas, productores y los sellos discográficos (Seabrook, 2024). La médula del escándalo radicó en el uso de una IA y no de un ghostwriter, lo que nos lleva a la conjetura de que fue una estrategia publicitaria, pues el tema en cuestión permaneció en los primeros lugares de la revista Billlboard. La figura del escritor fantasma es aplicada a aquel creador que vende su fuerza de trabajo a otro autor y no firma ni aparece en los créditos. El término se asocia a la literatura, pero existe en todas las artes y es un tema tabú en los estudios hispánicos sobre historia del arte, estudios literarios y musicología. Véase: Novotny (2018).

Con la IAPM hay nuevos derroteros en la industria fonográfica. La optimización de la mezcla, un proceso que requería de varios días o semanas de dedicación exclusiva y de oídos de un profesional, ahora es realizada en segundos. Hay dos aspectos que se resumen en la argumentación anterior: tiempo y calidad, dos elementos que la industria discográfica ha buscado resolver a lo largo de toda su existencia.

Inteligencia artificial y producción musical

Deruty et al. (2022) han distinguido tres campos de acción de la IAPM. El primero, composición musical en el sentido tradicional del término: generación de melodías, armonías y ritmos. El segundo aspecto involucra la improvisación musical y el performance en vivo, que tiene a la figura del DJ como protagonista (Knotts y

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Collins, 2021). En la elaboración de este ensayo se conoció que varios DJ organizan su material musical mediante IA: repertorio, mezcla de temas, combinaciones y efectos se hacen a través de IA y el auditorio no lo nota. Por último, el uso de la IAPM tiene un sitial de honor en la aplicación en estaciones de audio digital, procesamiento de material grabado, audio y edición. En esta área son muchas las posibilidades y que son usadas en producciones discográficas y música en vivo (Bowen, 2021). Esto ha incentivado a Google a desarrollar programas como DeepMind, una IA para generar música y SynthID, programa que detecta en una grabación los sonidos que han sido generados por una IA.[8]

En este último aspecto, Tsiros y Palladini (2020) han analizado el Channel-AI y sus aplicaciones en conciertos, transmisión en radio, streaming, teatros e iglesias.[9] Una IA polifuncional que no es automática y requiere la asistencia del ingeniero de audio. Los autores determinaron que los estudios anteriores se habían centrado en las posibilidades de las IA, pero poco en la importancia de la interacción del factor humano. Esto es central en la IAPM porque aún no se han desarrollado un software con esa total independencia.

El radio de acción de la IAPM es la música popular. Avdeeff (2019) señala que la IA trabaja desde modelos propositivos, el usuario decide qué aplicará y qué no. Además, la música continúa funcionando con el sistema musical de tradición occidental. La IAPM propone alternativas sónicas complejas, texturas interesantes, pero genera atmósferas musicales desde el punto de vista propositivo más tradicional: melodía y armonía tonal, ritmos reconocibles, aspectos que se circunscriben a la audición convencional del repertorio. Lo que la IAPM está cambiando es el flujo de trabajo de la producción musical, no el resultado estético.

Conforme a ello, la IA permite a los artistas y productores una paleta amplia de posibilidades en creación, aunque genere incongruencia en algunos aspectos. Por ejemplo, el compositor de hoy puede componer sin haber pasado por un conservatorio y sin tocar un instrumento. El productor musical puede elaborar fonogramas complejos sin haber pisado un estudio de grabación. Lo que establece una triangulación entre compositores, productores e IAPM. Sin embargo, las grandes corporaciones confían aún en el productor como director creativo y sigue controlando el resultado final. En consecuencia, el productor musical de hoy día es un intermedio entre la IAPM, el artista y la industria.

Clark et al. (2018) señalan que el productor controla la intervención de la IA y la puede usar de manera directa como otra herramienta de grabación. En este sentido, la IAPM es una máquina en proceso de aprendizaje y está sometida a la intervención de un diseño previo de trabajo para obtener resultados. Pero la IAPM ofrece alternativas al síndrome de la hoja en blanco y de bloqueo creativo. Además, estamos frente a un software que está en constante aprendizaje y perfeccionamiento, con lo que en el transcurso de los meses se podría convertir en piedra angular de la producción de audio. Una posible vertiente de la IA radica en la generación de ideas que sean innovadoras y poco ortodoxas (Giotti, 2021; Piantanida y Vega 2021). Sin

[8] Disponible en https://deepmind.google/.
[9] Disponible en https://apps.apple.com/ve/app/channel-ai/id6467775355.

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embargo, debemos destacar que las grabaciones profesionales realizadas con IA lejos de ser innovadoras, suena a música electrónica pop con un toque de sonido vintage. Estas cualidades no son aleatorias. La industria discográfica está generando productos con IA que conlleven una carga emocional para el oyente.

La producción musical se encuentra en este momento en una transición. Aún conviven simultáneamente la grabación analógica con la digital y la incorporación de la IAPM ha sido gradual. Empero, la tendencia es hacia la automatización completa de los procesos de grabación. Desde el pensamiento posthumano, estamos hablando de una IA que cree música de manera espontánea, porque, por ahora, la IA funciona como una herramienta más. Además, frente a la demanda y el estilo de la música, la IA no es aún independiente y es direccionada según los requerimientos estilísticos que la música requiera. En este sentido, el productor musical controla el estilo e identifica las necesidades expresivas y técnicas que requiere la música (Grachten et al., 2020). En realidad, estamos frente a la reducción de tiempos en la producción de un fonograma.

La IA ha impactado en el flujo de trabajo de la producción musical y se verán afectadas las oportunidades laborales. Habrá una transformación profunda de la producción como oficio. En la última década se habló de la desaparición del estudio de grabación profesional por la consolidación del Home Studio (Espiga, 2020); hoy estamos ante la aparición emergente de la IAPM que puede instalarse en un dispositivo móvil. Al respecto, los planes educativos deberán considerar el uso de esta tecnología de manera práctica y que está en constante cambio (Paterson et al., 2019). Los sellos discográficos han desarrollado aplicaciones para móviles, algunas de descarga gratuita. Esto les permite analizar la efectividad de la interfaz, del programa, tipo de audiencia y repertorios que se producen. Algunas aplicaciones de IAPM que funcionan a la fecha de redacción del presente ensayo y están disponibles en Google Play son: Djaminn, AI Cover Melodia, AI Song Generator, Musik Maker, Moises, Muso Chord AI, entre otras.

Desde su origen, la producción musical ha consistido en la captura, manipulación y soporte del audio. Pardo et al. (2019) definen lo anterior desde las operaciones que se realicen del sonido y que tengan como fin último su difusión. De esta manera, los parámetros de espacialidad, percepción espacial y espacialidad semántica del sonido son aspectos primordiales que modifica la IAPM. No en vano, el software LANDR[10] es una IA especializada en la posproducción de audio, modifica la compresión, ecualización, reverberación, profundidad y otros efectos que son utilizados en la búsqueda del sonido que desea el productor. La reverberación es el elemento que más se modifica durante la posproducción de audio. Una reverberación natural consiste en las reflexiones de tiene un sonido en superficies como madera o concreto y que están alrededor de donde se produce el sonido. Estas reflexiones producen un eco que permite identificar el espacio, las características de rebote, y redundan en la cualidad sónica de la grabación. El dominio de la reverberación garantiza de antemano la calidad que se obtendrá en la grabación.

[10] Disponible en https://www.landr.com/.

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Por esta razón, la cadena de producción musical considera al artista como materia prima. El aporte musical se manipula para obtener un fonograma óptimo, las decisiones técnicas y estéticas quedan en manos del productor musical. La ecualización afecta el audio y puede modificar el timbre, amplía o acorta la amplitud de onda y es un proceso que, realizado en forma analógica, implicaba muchas horas de trabajo de un técnico especializado. Con la ecualización incorporada a las IAPM se ahorran horas de estudio, el ingeniero de audio obtiene en segundos varias opciones y tan solo debe elegir la que mejor funcione. Es en este último aspecto en el que la educación para la producción musical debe enfocarse: preparar al futuro productor para que tome las mejores decisiones a partir de factores estéticos y estilísticos de la música.

Las exigencias de un productor profesional podrán diferir con respecto a un productor aficionado, pero la IAPM acota la brecha entre profesionales y legos. Un aspecto que señalan Pardo et al. (2019) es el uso de palabras generales en usuarios aficionados que describen el sonido que desean. Palabras como “brillo”, “profundidad”, entre otras, se usan con frecuencia para indicar el sonido que se busca; en consecuencia, se modifica el audio a partir de descriptores que modifican la amplitud, frecuencia, etc. Los autores realizaron el levantamiento de un vocabulario utilizado por músicos, ingenieros y aficionados para referirse a tres de los principales efectos de posproducción: ecualización, reverberación y rango dinámico (compresión). Los investigadores programaron una IA con los descriptores de audio, diseñaron un margen de aproximación y la posibilidad de continuar haciendo cambios al resultado sonoro manualmente. De esta manera, ha surgido SynthAsist: Vocal Imitation, un software en el que el usuario no necesita verbalizar lo que desea, tan solo con su voz, a través de onomatopeyas, susurros o chasquidos, obtiene una aproximación del sonido que desea. El proceso es similar a dictar en voz alta a un procesador de palabras (Cartwright y Pardo, 2014).

Llegado a este punto, el estudiante no necesitará tener una idea concreta del sonido que desea, ni conocimientos musicales previos; con solo emitir los sonidos, el software generará un resultado sonoro que se manipula en posproducción con otra inteligencia artificial. Ante este panorama de independencia de los nóveles productores musicales, ¿cuál es el rol del docente de producción musical frente a la IA? ¿Cómo sería un plan de trabajo para un docente de producción musical y que deba enseñar con esta tecnología? El docente está quedando como un orientador, da instrucciones y aconseja cómo aprovechar el programa. Pero, como han mostrado Pardo et al. (2019), llegará un grado de sofisticación en el que esto ya no se hará. Entonces, a corto plazo, el docente facilitará la comprensión de las distintas corrientes estéticas con el uso de la IA.

IAPM y la práctica docente

En el ámbito educativo, la IA es un modo de representación del conocimiento, resultado de años de estudios teóricos y técnicos sustentados por una base de datos; a partir de esto, la IA genera resultados sustentados desde las nociones que tenga de la música (Moffat y Sandler, 2019). Se presenta, entonces, un dilema profesional cuando el docente universitario guía al novel estudiante de producción musical. ¿Debe llevarlo por el sendero tradicional de la escucha crítica, pensada y razona de un repertorio?, ¿o incentivarlo a seguir los derroteros que marca la IA? Lo ideal es la conjunción de ambas prácticas, pero no siempre es posible.

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Se puede contar con el uso gratuito de IA en tareas básicas, pero la IAPM tiene sus costos y en el ámbito universitario requiere de licencias educativas. En América Latina, son necesidades difíciles de presupuestar en el sector de la educación pública. El acceso a la tecnología es mediado por la capacidad de adquisición de las instituciones o productores que trabajen de manera independiente. Algunos países del continente no poseen una industria musical consolidada, las universidades públicas ven mermar los recursos financieros y se hace menester fortalecer alianzas que involucren acceso a equipos y licencias de IAPM. De la misma manera, es imperativa la formación del docente en el uso de IA.

¿Qué es lo esencial de un proceso educativo? Capacitar a un individuo para que resuelva situaciones en el mundo profesional y personal. En este sentido, la IA ofrece varias alternativas para resolver un mismo problema. Específicamente, con las IAPM, no hay un modelo exclusivo para equilibrar los instrumentos en la mezcla de una producción musical. Una mezcla óptima es posible por la conjunción de la tecnología, la interpretación musical y el refinamiento estético que tenga el ingeniero de audio. Del mismo modo, cuando nos enfrentamos a procesos automatizados con IAPM, distintas opciones funcionan de manera óptima (Jillings y Stables, 2017). A pesar de la intervención técnica de la inteligencia artificial, el productor musical aún tiene la decisión final, la última palabra está en manos de un humano. Al respecto, aunque haya la intervención de los algoritmos, el resultado que llega a los oídos del consumidor es de naturaleza subjetiva. He aquí la presencia vital del tutor acompañante.

Hoy, la enseñanza de producción musical involucra que el docente oriente sobre la inteligencia artificial en esa área; a la vez, ha de guiar al estudiante y procurar que el gusto se amplíe al campo de acción y el conocimiento sobre repertorios musicales. A tal efecto, la inteligencia artificial para la producción musical permite que un músico aficionado obtenga un resultado satisfactorio y profesional desde una primera grabación. La pista queda con los estándares que exigen las plataformas streaming y también puede cubrir los requisitos de derecho de autor. Sin embargo, continúa mediando la presencia del experto y del oído entrenado; esto es, tener la capacidad de reconocer, a través de la escucha, si un género musical funciona o no.

Ante el desarrollo de la IAPM, ¿cuál es el impacto en el ejercicio docente de la producción musical? Ahora mismo, no es posible medir el impacto que está teniendo en los centros de enseñanza de producción musical. Se ha evidenciado que la IA continúa dentro de los roles tradicionales de la música popular; es decir, se ha acoplado a la composición y es usada en la edición y mezcla de audio. Pero el resultado se restringe a la representación simbólica que tiene un determinado género musical (Deruty et al., 2019). Dicho de otro modo, la inteligencia artificial en la producción musical se ha posicionado como tecnología de procesamiento de audio, es parte de las estaciones de audio digital, interviene en la creación de síntesis de sonido, interpolación de materiales musicales, en la mezcla y mastering, pero necesita al usuario que acerca a la IA con la familiaridad de un estilo musical.

La aparición de la IAPM ha acortado el tiempo de aprendizaje del novel productor musical. El proceso de aprendizaje que consistía en etapas para conocer los equipos de grabación, y el procesamiento de la señal

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de audio conllevaba a un mínimo de teoría y muchas horas de práctica hasta controlar la elaboración del fonograma. La inteligencia artificial ha trastocado el mecanismo tradicional de trabajo, que consistía en la relación entre compositor, músicos, ingeniero de sonido, técnicos de grabación e ingenieros de mezcla y mastering (Burguess, 2013). Así, con la IAPM, los procesos anteriores se realizan casi simultáneamente y por la misma persona.

Ahora bien, desde la educación se ha incentivado el autoaprendizaje en sílabos de carreras técnicas y humanísticas (Lázaro, 2011; González Álvarez, 2018; Barragán Becerra et al., 2017). En lo que respecta a la IAPM, se abre una oportunidad para motivar esta didáctica. Es aplicable a proyectos prácticos, en los cuales los estudiantes exploran las posibilidades creativas y organizan su trabajo a partir de esta tecnología. El docente podrá incentivar entre los estudiantes ejercicios de reflexión, abriendo el debate sobre el impacto ético, estético y práctico de la inteligencia artificial para la producción musical. De esta manera, el educador es un filtro y un consejero, recomienda lecturas, hace tutoriales en línea y presenta propuestas de proyectos artísticos y teóricos para que los estudiantes exploren, por su cuenta, las posibilidades de la IAPM (Sturm et al., 2019). En otras palabras, el docente es esencial en la era de la IAPM, es el lado humano que proporciona retroalimentación, identifica áreas de mejora y hace sugerencias para el avance dentro del estilo de la grabación que se ha decidido hacer.

Es inevitable comparar las indagaciones de los académicos norteamericanos con los trabajos hechos en Hispanoamérica en torno a la IA y la educación. Brossi et al. (2019) señalan las ventajas educativas, pero también hacen una crítica ante los “desequilibrios estructurales, económicos, sociales y políticos, y [...] las desigualdades basadas en diferentes variables demográficas” (Brossi et al., 2019, p. 8). La IA no es culpable de las brechas educativas, es asunto de vieja data y de carácter estructural en América Latina. De concentrar la atención allí, se pierde el foco en las posibilidades pedagógicas, creativas y uso en la industria de la música. Con la inteligencia artificial en producción musical, el docente es pieza primordial al orientar en el uso técnico y artístico. De allí que sea posible afirmar que se está transformando el modelo pedagógico, convirtiéndose en uno en el que la IA es un implemento básico, como en su momento lo fueron el libro, el cuaderno, el lápiz y la computadora. Asimismo, se están transformando las relaciones docente-alumno, entre colegas y de las instituciones con sus miembros (Tomalá de la Cruz et al., 2023). Puntualmente, el productor musical que ejerce la pedagogía deberá comprender que la inteligencia artificial está cambiando la industria musical. Ante esta realidad, el docente debe incorporar los conocimientos de la teoría de la música, técnicas de grabación, escucha crítica y mezcla con las diferentes IAPM. A mayor amplitud de conocimientos musicales y opciones tecnológicas, mayor será la versatilidad con que se enfrentará el nuevo productor musical en el mercado laboral.

La deontología en el uso de la inteligencia artificial es un aspecto sobre el cual debe reflexionar el docente de producción musical, pues el uso ético de la tecnología tendría que imperar. Esto conlleva a la evaluación pragmática de su empleo, por lo cual es pertinente el desarrollo de normativas que tendrá la IAPM dentro del marco jurídico en la industria musical. Es paradójico, por decir lo menos, que una materia que gradualmente se ha retirado de los programas oficiales de estudio, la Ética, sea fundamental para la docencia

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con IAPM. En lengua española, los artículos consultados revisan casos de Europa y Estados Unidos en donde aún no hay una postura legal inequívoca. Al respecto, véanse: Flores-Vivar y Gacía Peñalvo 2023; González Sánchez et al. 2023; Terrones Rodríguez y Rocha Benardi 2024; Lacruz Mantecón 2021; Gómez Jerez 2021 y Sanz Mendioroz 2023. ¿Puede brindar réditos al artista original su voz generada por IA? ¿Es ética la utilización de la voz de este artista, aunque no haya producido ni una sola nota? Estamos frente a un problema moral que no solo aplica a la industria del disco, sino a la sociedad en general. Como se ha dicho, la industria musical está invirtiendo en el desarrollo de las inteligencias artificiales y, simultáneamente, el equipo jurídico de las empresas analiza las posibles implicaciones legales. El uso industrial de la IAPM aumentará considerablemente los réditos musicales: generación de nueva música, estrategias de promoción y circulación en listas de reproducción a partir de los algoritmos, mayor producción a menor costo. Así pues, el docente aconsejará a los estudiantes sobre el cambio del paradigma jurídico tradicional, los derechos patrimoniales, morales e intelectuales producidos por humanos (Buning, 2018; Lauber-Rönsberg y Hetmank, 2019; Sturm et al., 2019).

Discernir sobre el uso de la inteligencia artificial es complejo cuando se trata de derecho internacional y derechos de autor. Autoría y originalidad son el centro de discusión. Sin embargo, a lo largo de la historia del arte, los creadores se han valido de recursos humanos y técnicos para refinar el producto final. Ejemplos hay muchos, pero bastará recordar al pintor Diego de Velázquez y el trabajo que realizaban sus asistentes mientras que el maestro sevillano hacía algunos retoques. Está el caso del compositor italiano Giascinto Scelsi, quien grababa sus improvisaciones y luego las mandaba a transcribir; de este modo, quedaban fijadas en el soporte de papel. La IA plantea los mismos desafíos en el arte y en la música, pero actualmente como extensión de las técnicas de creación.

La IAPM permite que un usuario sin experiencia en música obtenga resultados satisfactorios en la producción de audio. Ahora bien, esto no garantiza la visibilización del fonograma en el mercado de la música. De manera objetiva, se ha acortado la brecha entre práctica y teoría; también entre especialistas y aficionados. Por un lado, para las compañías discográficas se amplía un mercado y, por el otro, el sistema educativo tradicional entra en crisis, entendiendo el término como la necesidad de cambiar los paradigmas pedagógicos más tradicionales (Morales-Chan, 2023). El lenguaje técnico ya no será necesario, tampoco la necesidad de invertir tiempo aprendiendo el oficio. Equipos de alta gama quedarán solo para especialistas de envergadura. La grabación musical dentro del estudio de grabación se va convirtiendo en una práctica romántica, llena de detalles y vicisitudes técnicas y humanas que el productor musical deberá sortear. Las IAPM están cambiando la manera de producir. Todo se resume en ahorro de tiempo, costos y mayor efectividad (Mateos Blanco et al., 2024; Segarra Ciprés et al., 2024).

Hoy, los centros de educación superior que ofrecen la carrera de producción musical tienen varios roles. En primer lugar, estos centros son catalizadores para el desarrollo creativo y técnico de los estudiantes, proporcionan un entorno académico que fomenta la exploración, la experimentación y la innovación en el ámbito de la grabación y el audio. Además, son facilitadores del aprendizaje porque los recursos técnicos y humanos son especializados: equipos de última generación y expertos en la industria que enriquecen la experiencia

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educativa. En segundo lugar, estos centros forman a profesionales competentes a través de diseños curriculares rigurosos y que deben actualizarse, los estudiantes adquieren habilidades técnicas, teóricas y prácticas para sobrevivir en una industria dinámica y en constante cambio. Además, las universidades e institutos politécnicos fomentan las habilidades interdisciplinarias, como la gestión de proyectos, el trabajo en equipo y la comunicación efectiva, que son esenciales para el desenvolvimiento de un campo altamente colaborativo y competitivo. En este sentido, los centros de enseñanza deben desempeñar un papel vital en la promoción de la investigación y la innovación en este ámbito (Chicaiza et al., 2023).

Estos centros contribuyen al avance del conocimiento en producción musical, a la experimentación con metodologías, tecnologías y prácticas pedagógicas que enriquezcan la educación como la industria musical en su conjunto. La irrupción de la Inteligencia Artificial en la Producción Musical (IAPM) plantea desafíos, pero también oportunidades dentro de la enseñanza y aprendizaje en música. El enfoque pedagógico convencional, requiere la integración de la IAPM de carácter activo y reflexivo por parte de los educadores y estudiantes por igual. El uso de la IAPM obliga a repensar los objetivos educativos y las competencias necesarias para los estudiantes de producción musical. Más allá de las técnicas en instrumentación y producción, se deben incorporar habilidades en el manejo y comprensión de herramientas de IA para la creación musical. Esto demanda una actualización constante de los programas académicos y una colaboración estrecha con la industria para asegurar la relevancia y pertinencia de la formación ofrecida. En el contexto del aula, la introducción de la IAPM requiere una reconsideración de las dinámicas de enseñanza y aprendizaje. Los educadores deben adoptar un enfoque orientado hacia la resolución de problemas y hacia el aprendizaje basado en proyectos, donde los estudiantes tengan la oportunidad de experimentar con algoritmos, modelos de aprendizaje automático y técnicas de procesamiento de señales para la creación musical. Esto no solo promueve la creatividad y la innovación, sino que también fomenta el desarrollo de habilidades cognitivas superiores, como la resolución de problemas complejos y el pensamiento crítico.

Conclusiones

La incorporación de la IAPM en el proceso tradicional de enseñanza-aprendizaje en música representa un cambio paradigmático que requiere una adaptación holística tanto a nivel curricular como pedagógico. Sin embargo, al abrazar este cambio con apertura y compromiso, la educación musical puede potenciar su capacidad para preparar a los estudiantes para los desafíos y oportunidades de un mundo cada vez más digitalizado y tecnológico. La producción musical ha sido posible gracias a la tecnología y la aparición de la IAPM, lejos de condicionarla, potencia resultados, estéticas y amplía mercados. Hay aspectos musicales que pueden ser sugeridos por la inteligencia artificial, como frases musicales e, incluso, composiciones completas. Sin embargo, es esencial la decisión final en manos de un humano. Porque la palabra “inteligencia” se asocia con la noción del pensamiento humano, con criterios positivos o no, pero que señalan ideas o propuestas. Es en esta última palabra donde radica lo que es, hasta el momento, la IAPM: herramienta de producción que parte del modelo colaborativo y genera posibilidades. Al momento de redactar este ensayo, no se conoce de ninguna IA capaz de generar música por combustión espontánea.

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En los próximos años, la forma en que se ejercerá la carrera del productor musical afectará el uso de la IAPM. La tecnología y su acceso se hará cada vez más refinado y permitirá, como nunca, la producción musical independiente de alta calidad. Serán las reglas profesionales las que guiarán el equilibrio entre las propuestas de los ingenieros de mezcla, de mastering y los productores musicales. Así, los objetivos se pueden reemplazar por juicios subjetivos. La consolidación entre los estudios convencionales de producción musical y la IAPM proporcionarán más información, discernimiento y posibilidades. Todo parece indicar que el rol docente en la era de la inteligencia artificial en producción musical será activo. Detrás están quedando las largas sesiones de escucha y de trabajo dentro del estudio de grabación. En una época en la que los procesos educativos suelen acortarse, el tiempo que necesita un estudiante para familiarizarse con la cadena de trabajo de la producción musical. Hace treinta años, el productor tardaba entre siete y diez años en aprender el oficio en el estudio; ahora, un estudiante aplicado puede producir en pocas semanas.

En este sentido, los docentes dedicados a la producción musical han de introducir a los estudiantes en parámetros generales de la IAPM, porque el estudiante explorará por su cuenta otras posibilidades. El docente se convierte en una guía durante los proyectos artísticos en los que los estudiantes aplican sus criterios; así, fomentará discusiones, análisis y opciones que determinen, desde lo humano, la riqueza técnica y estética de los fonogramas hechos con IAPM. En relación con esto, el docente ejercerá el rol de tutor y creador, fomentará la retroalimentación, la crítica y se constituirá en una figura valiosa para observar los cambios y tendencias en la industria. Es paradójico, pero no descabellado, pensar que, frente a la avalancha tecnológica, ha llegado el momento de formar docentes con mayor peso en las disciplinas humanísticas, que permita generar conocimientos y críticas a partir de las sensibilidades éticas, sociales y artísticas.

El impacto de la Inteligencia Artificial en la Producción Musical en la pedagogía nos presenta un panorama de aristas y desafíos. Al examinar las implicaciones educativas entre la creatividad humana y las capacidades algorítmicas de la máquina, se diluyen las fronteras de la enseñanza y de los procesos de aprendizaje; en este sentido, se hace necesaria la reflexión sobre el papel del educador ante este nuevo paradigma. La pedagogía musical con herramientas basadas en IA incita a la reflexión permanente sobre el papel del educador como facilitador de nuevos significados musicales, donde las herramientas de IA son intermediarios en la construcción de conocimiento. Por otro lado, las jerarquías establecidas en el proceso educativo musical tradicional y la realidad de una sociedad interconectada, hace que el docente se convierta en un agente de cambio, que desafíe las estructuras tradicionales y que promueva una pedagogía inclusiva y adaptable a las demandas del siglo XXI. En conclusión, el papel del educador en la era de la IAPM trasciende la mera transmisión de conocimientos técnicos. Es un guía que cultiva la creatividad, la curiosidad y el pensamiento crítico en los estudiantes, a través de la innovación tecnológica y la expresión artística.

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Bibliografía

Avdeeff, M. (2019). Artificial Intelligence & Popular Music: SKYGGE, Flow Machines, and the Audio Uncanny Valley. *Arts, 8* (4), 130-151. https://doi.org/10.3390/arts8040130

Barragán Becerra, J., Hernández, N. E. y Medina Castro, A. (2017). Validación de guías de autoaprendizaje en simulación clínica para estudiantes de enfermería. *Revista Cuidarte, 8* (2), 1582-1590. https://doi.org/10.15649/cuidarte.v8i2.377

Born, G. (1995). *Rationalizing Culture. IRCAM, Boulez, and the Institutionalization of the Musical Avant-Garde.* University of California Press.

Born, G., Morris, J., Díaz, F. y Anderson, A. (2021). *Artificial Intelligence, Music Recomendation, and the Curation of Culture.* Universidad de Toronto.

Bowen, O. (2021). Sociocultural and Design Perspectives on AI-Based Music Production: Why Do We Make Music and What Changes if AI Makes It for Us? en E.R. Miranda (Ed.), *Handbook of Artificial Intelligence for Music* (pp. 1-20). Springer. https://doi.org/10.1007/978-3-030-72116-9_3

Burgess, R.J. (2013). *The Art of Music Production: The Theory and Practice.* Oxford University Press.

Buning, M. de C. (2018). Artificial Intelligence and the Creative Industry: New Challenges for the EU Paradigm for Art and Technology en W. Barfield y U. Pagallo (Eds.), *Research handbook on the law of artificial intelligence* (pp. 511-535). Edward Elgar Publishing. https://hdl.handle.net/1814/70217

Caballero Parra, C.A. (2023). *La producción musical en Colombia en las décadas de 1960 y 1970. Formas de registro y estética sonora de la música tropical colombiana* [Tesis de doctorado, Universidad Politécnica de Valencia]. https://riunet.upv.es/handle/10251/192511

Cartwright, M. y Pardo, B. (2014). SynthAssist: an audio synthesizer programmed with vocal imitation. *Proceedings of the 22nd ACM International Conference on Multimedia*, pp. 741-742. https://doi.org/10.1145/2647868.2654880

Cetta, P. (2018). *Fundamentos de composición musical asistida por computadora en el entorno de programación OpenMusic.* Universidad Católica Argentina.

Cheung-Ruiz, M. y Pérez-Valero, L. (2020). *Producción musical. Pedagogía e investigación en artes.* UArtes Ediciones.

Chicaiza, R.M., Camacho Castillo, L.A., Ghose, G., Castro Magayanes, I.E. & Gallo Fonseca, V.T. (2023). Aplicaciones de Chat GPT como inteligencia artificial para el aprendizaje del idioma inglés: avances, desafíos y perspectivas futuras. *LATAM Revista Latinoamericana de Ciencias Sociales y Humanidades 4* (2), 2610-2628. https://doi.org/10.56712/latam.v4i2.781

Clark, E., Ross, A.S., Tan, C., Ji, Yi., y Smith, N.A. (2018). *Creative writing with a machine in the loop: Case studies on slogans and stories.* 23rd International Conference on Intelligent User Interfaces (IUI). https://doi.org/10.1145/3172944.3172983

Deruty, E., Grachten, M., Lattner, J.N., Aouameur, G. (2022). On the Development and Practice of AI Technology for Contemporary Popular Music Production. *Transactions of the International Society for Music Information Retrieval, 5* (1), 35-49. https://transactions.ismir.net/articles/10.5334/tismir.100

Di Cione, L. (2023). *Musicología de la producción fonográfica: las operaciones técnico-discursivas en el estudio de grabación analógica y las poéticas sonoras del rock en Argentina* [Tesis de doctorado, Universidad de Buenos Aires]. https://repositoriosdigitales.mincyt.gob.ar/

Dirst, M. (2012). *Engaging Bach: The Keyboard Legacy from Marpurg to Mendelssohn.* Cambridge University Press.

Dugan, D. (1975). Automatic Microphone Mixing. *Journal of the Audio Engineering Society 23,* 442-449.

Revista YUYAY, Estrategias, Metodologías & Didácticas Educativas ISSN: 2953-6685 e-ISSN: 2953-6677

Espiga, P. (2020). La construcción de la imagen del estudio de grabación tradicional. *Etno: Cuadernos de Etnomusicología, 15* (2), 226-246. https://www.sibetrans.com/

Flores-Vivar, J. M. y García Peñalvo, F. J. (2023). Reflexiones sobre la ética, potencialidades y retos de la Inteligencia Artificial en el marco de la Educación de Calidad (ODS4). *Comunicar, 74* (31). https://doi.org/10.3916/C74-2023-03

Giotti, A. (2021). Artificial intelligence for music composition en E.R. Miranda (Ed.), *Handbook of Artificial Intelligence for Music* (pp. 53-73). Springer Link. https://doi.org/10.1007/978-3-030-72116-9_3

Gómez Jerez, A.M. (2021). La capacidad creativa en los sistemas de inteligencia artificial y sus consideraciones en el derecho de autor. *La Propiedad Inmaterial, 31*, 283-297. https://doi.org/10.18601/16571959.n31.11

González Álvarez, P. (2018). Diseño de una plataforma virtual de autoaprendizaje de la escritura académica: fundamentación teórica y decisiones pedagógicas en la Universidad de Chile. *Álabe 17*, 1-17. https://doi.org/10.15645/Alabe2018.17.7

González Sánchez, J. L., Villota García, F. R., Moscoso Parra, A. E., Garces Calva, S. W., Bazurto Arévalo, B. M. (2023). Aplicación de la Inteligencia Artificial en la Educación Superior. *Revista Científica. Dominio de las Ciencias, 9* (3), 1097-1108. https://doi.org/10.23857/dc.v9i3.3488

Grachten, M., Lattner, S., y Deruty, E. (2020). Bass-net: A variational gated autoencoder for conditional generation of bass guitar tracks with learned inetractive control. *Applied Science, 18* (10). https://doi.org/10.3390/app10186627

Gunkel, D.J. (2008). Rethinking the Digital Remix: Mash-Ups and the Metaphysics of Sound Recording. *Popular Music and Society, 31,* 489-510. https://doi.org/10.1080/03007760802053211

Hatschek, K. y Wells, V.A. (2018). *Historical Dictionary of the American Music Industry.* Rowman & Littlefield.

Herndon, H. (2019). *Proto.* 4AD.

Hiller, L.A. y Isaacson, L. (1959). *Experimental Music: Composition with an Electronic Computer.* McGraw-Hill.

Jillings, N. y Stables, R. (2017). Automatic Masking Reduction in Balance Mixes Using Evolutionary Computing. *Audio Engineering Society Convention* 43. Audio Engineering Society.

Juan de Dios Cuartas, M.A. (2016). *La figura del productor musical en España. Propuestas metodológicas para un análisis musicológico* [Tesis de doctorado, Universidad de Oviedo].

Knotts, S. y Collins, N. (2021). AI-Lectronica: Music AI in clubs and studio production en Miranda, E.R. (Ed.), *Handbook of Artificial Intelligence for Music* (pp. 849-877). Springer. https://doi.org/10.1007/978-3-030-72116-9_3

Lacruz Mantecón, M. (2021). *Inteligencia Artificial y derecho de autor.* Editorial Reus.

Lauber-Rönsberg, A. y Hetmank, S. (2019). The concept of authorship and inventorship under pressure: Does artificial intelligence shift paradigms? *Journal Intellectual Property Law & Practice, 14*, 570-579. https://doi.org/10.1093/jiplp/jpz061

Lázaro, N. (2011). *Tendencias pedagógicas en centros de autoaprendizaje de Alemania, Suiza, Hong Kong y España.* Universidad Nacional de Educación a Distancia.

Mateos Blanco, B., Álvarez Ramos, E., Alejeldre Biel, L., Parrado Collantes, M. (2023). Vademecum of artifitial intelligence tools applied to the teaching of languages. *Journal of Technology and Science Education, 14* (1): 77-94. https://doi.org/10.3926/jotse.2522

Miranda, E., ed. (2000). *Readings in Music and Artificial Intelligence.* Harwood.

Moffat, D. y Sandler, M.B. (2019). Approaches in Intelligent Music Production. *Arts, 8* (4), 125-129. https://doi.org/10.3390/arts8040125

Morales-Chan, M.A. (2023). Explorando el potencial del ChatGPT: una clasificación de Prompts efectivos para la enseñanza. http://biblioteca.galileo.edu/tesario/handle/123456789/1348

Revista YUYAY, Estrategias, Metodologías & Didácticas Educativas ISSN: 2953-6685 e-ISSN: 2953-6677

Moylan, W. (2020). *Recording Analysis. How the Record Shapes the Song.* Routledge.

Novotny, A. (2018). *A Collection of Art: The Ghost Writer.* Create Space.

Pardo, B., Cartwright, M., Seetharaman, P., y Kim, B. (2019). Learning to Build Natural Audio Production Interfaces. *Arts, 8* (3), 110-131. https://doi.org/10.3390/arts8030110

Paterson, J., Toulson, R., y Hepworth-Sawyer, R. (2019). User-Influenced / Machine-Controlled Playback: The VariPlay Music App Format for Interactive Recorded Music. *Arts, 8* (3), 112-129. https://doi.org/10.3390/arts8030112

Pérez-Valero, L. (2022). *La producción discográfica de Xavier Cugat (1933-1950)* [Tesis de doctorado, Pontificia Universidad Católica Argentina]. https://repositorio.uca.edu.ar/handle/123456789/14389

Piantanida, P., y Vega, L.R. (2021). Information bottleneck and representation learning en Rodriguez, M.R.D. y Eldar, Y.C. (Eds.), *Information Theoretic Methods in Data Science* (pp. 330-358). Cambridge University Press. https://doi.org/10.1017/9781108616799.012

Reje, A. (2022). *Ethical Risk Analysis of the Use of AI Music Production* [Tesis de Maestría, KTH Royal Institute of Technology]. https://kth.diva-portal.org/

Road, C. (1980). Artificial Intelligence and Music. *Computer Music Journal 4*, 13-25.

Ros-Fábregas, E. (2023). Musicología en la era de la inteligencia artificial (IA). *Anuario Musical*, (78), 7-12. https://doi.org/10.3989/anuariomusical.2023.78.01

Russell, S. y Norvig, P. (1995). *Artificial Intelligence: A Modern Approach.* Prentice-Hall.

Sanz Mendioroz, M. (2023). *Autoría como elemento principal de los derechos de autor en el ámbito de la Inteligencia Artificial (IA)*. [Tesis de grado. Comillas Universidad Pontificia]. https://repositorio.comillas.edu/

Seabrook, J. (29 de enero de 2024). Inside the Music Industry's High-States A.I. Experiments. *The New Yorker Daily.* https://www.newyorker.com/magazine/2024/02/05/inside-the-music-industrys-high-stakes-ai-experiments

Segarra Ciprés, M., Grangel Seguer, R. & Belmonte Fernández, O. (2024). ChatGPT como herramienta de apoyo al aprendizaje en la educación superior: una experiencia docente. *Revista Tecnología, Ciencia y Educación,* (28). https://doi.org/10.51302/tce.2024.19083

Schedl, M., Yang, Yi-Hsuan y Herrera-Boyer, P. (2016). Introduction to Intelligent Music Systems and Applications. *ACM Transactions on Intelligent Systems and Technology, 8* (17), 1-8. https://doi.org/10.1145/2991468

Sheridan, T. B. y Verplank, W. L. (1978). *Human and Computer Control of Undersea Teleoperators.* Technical Report. Massachusetts Inst of Teach Cambridge Man-Machine Systems Lab.

Skygge (2018). *Hello World*. Sony Music.

Southerm, T. (2018). *I AM AI.* Independiente.

Stypullkowski, K. (2020). *Los estudios para piano de Teobaldo Power (1848-1884) en el desarrollo de la escuela pianística en España* [Tesis de Fin de Máster, Universidad de Valladolid]. https://uvadoc.uva.es/handle/10324/45855

Sturm, B. L., Iglesias, M., Tal, O. B., Mixon, M. y Gómez, E. (2019). Artificial Intelligence and Music: Open Questions of Copyright Law and Engineering Praxis. *Arts, 8* (3), 115-119. https://doi.org/10.3390/arts8030115

Revista YUYAY, Estrategias, Metodologías & Didácticas Educativas ISSN: 2953-6685 e-ISSN: 2953-6677

Terrones Rodríguez, A. L. y Rocha Benardi, M. (2024). El valor de la ética aplicada en los estudios de ingeniería en un horizonte de inteligencia artificial confiable. *Sophia. Colección de Filosofía de la Educación, 36*, 221-245. https://doi.org/10.17163/soph.n36.2024.07

Tomalá de la Cruz, M.A., Mascaró Benítez, E.M., Carrasco Cachinelli, C.G. y Aroni Caicedo, E.V. (2023). Incidencias de la inteligencia artificial en la educación. *Recimundo. Revista Científica Mundo de la Investigación y el Conocimiento, 7* (2), 238-251.

Tsiros, A. y Palladini, A. (2020). Towards a Human-Centric Design Framework for AI Assisted Music Production. *NIME'20,* 399-404.

Zagorski-Thomas, S. (2014). *The Musicology of Record Production.* Cambridge University Press.

Revista YUYAY, Estrategias, Metodologías & Didácticas Educativas ISSN: 2953-6685 e-ISSN: 2953-6677

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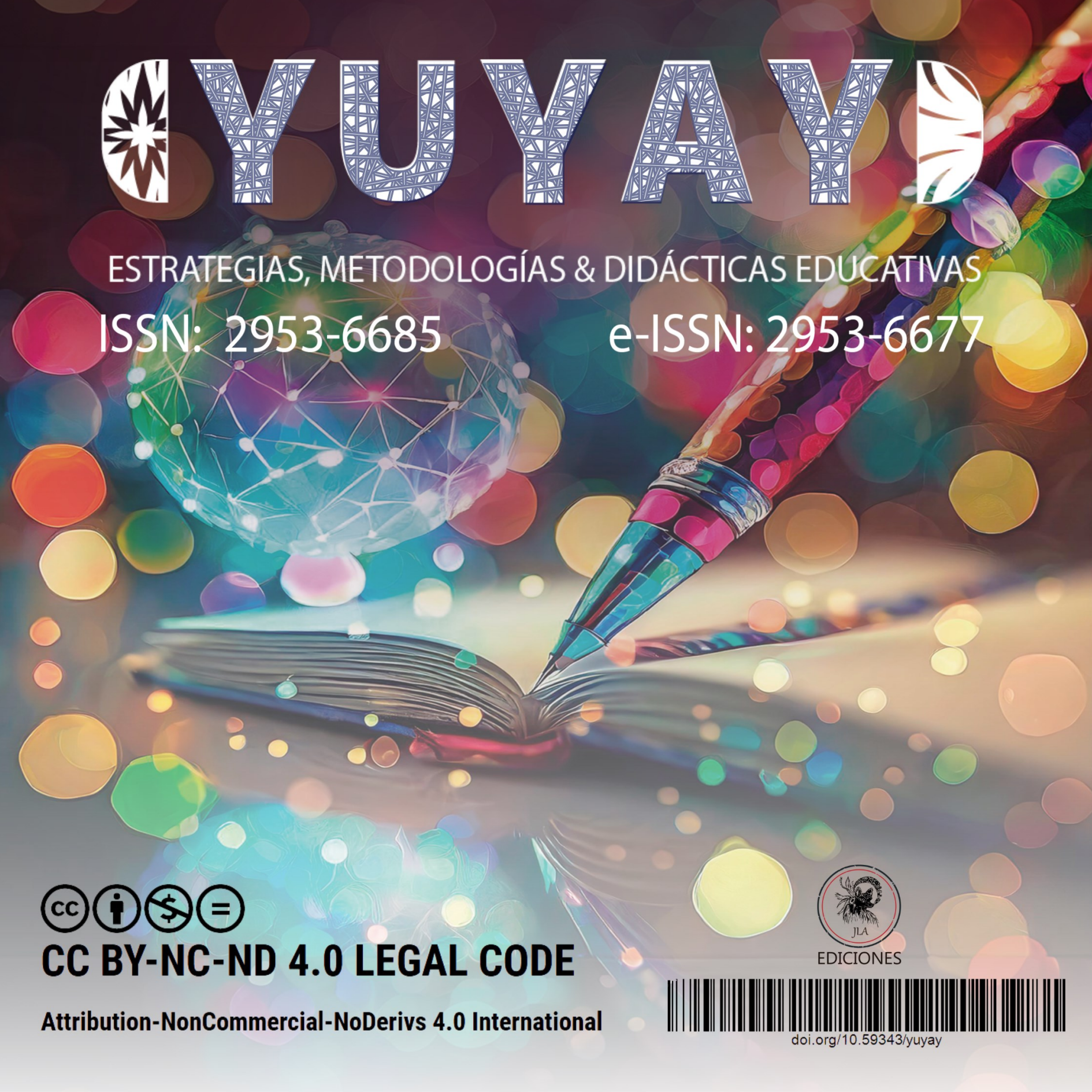

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