SCT Proceedings in Interdisciplinary Insights and Innovations. 2025; 3:453
doi: 10.56294/piii2025453

Category: 10th Ibero-American Meeting on Innovation, Research and Good Educational Practices (UNAM)

ORIGINAL

Listen, learn, create! Cognitive development with rhythm and technology

¡Escucha, aprende, crea! Desarrollo cognitivo con ritmo y tecnología

Carlos Hernández Colunga [1]

[1] Universidad Interamericana para el Desarrollo (UNID). Estado de México, México.

Cite as: Hernández Colunga C. Listen, learn, create! Cognitive development with rhythm and technology. SCT Proceedings in Interdisciplinary Insights and Innovations. 2025;3:453. https://doi.org/10.56294/piii2025453

Submitted: 12-10-2024 **Reviewed:** 06-11-2024 **Accepted:** 04-01-2025 **Published:** 05-01-2025

Editor: Emanuel Maldonado

ABSTRACT

This research presents the results of a disruptive educational experience, in which, from the approach of Developmental Didactics, an innovative project was implemented that integrated music as a trigger for learning in undergraduate students in education. Through the course entitled "Listen, Learn, Create! Cognitive Development with Rhythm and Technology", the students participated in collaborative activities where music and Information and Communication Technologies (ICT) were key elements to contribute to the development of cognitive and instrumental skills. This approach allowed the students to become the protagonists of their own learning, enhancing their creativity and imagination.

The results highlight the positive impact on the development of digital and socioemotional competencies, as well as on the ability to apply ICTs in an innovative way in educational contexts. Likewise, the experience showed that the use of music as a pedagogical mediator facilitates the development of analysis, synthesis and critical thinking processes. Finally, we reflect on how this methodology fosters flexible learning environments, self-discovery, genuine experiences of dialogue and recognition of otherness and fun.

Keywords: ICT, Cognitive Development, Music, Developmental Didactics, Innovation.

RESUMEN

Esta investigación presenta los resultados de una experiencia educativa disruptiva, en la que, desde el enfoque de la Didáctica Desarrolladora, se implementó un proyecto innovador que integró la música como detonador de aprendizajes en estudiantes de licenciatura en educación. A través del curso titulado "¡Escucha, Aprende, Crea! Desarrollo Cognitivo con Ritmo y Tecnología", las alumnas participaron en actividades colaborativas donde la música y las Tecnologías de la Información y la Comunicación (TIC) fueron elementos clave para contribuir al desarrollo de habilidades cognitivas e instrumentales. Este enfoque permitió que las estudiantes se convirtieran en protagonistas de su propio aprendizaje, potenciando su creatividad e imaginación.

Los resultados destacan el impacto positivo en el desarrollo de competencias digitales y

socioemocionales, así como en la capacidad para aplicar las TIC de manera innovadora en contextos educativos. Asimismo, la experiencia mostró que el uso de la música como mediador pedagógico facilita el desarrollo de procesos de análisis, síntesis y pensamiento crítico. Finalmente, se reflexiona sobre como esta metodología propicia ambientes flexibles de aprendizaje, de autodescubrimiento, experiencias genuinas de dialogo y reconocimiento de la otredad y de diversión.

Palabras clave: TIC, Desarrollo Cognitivo, Música, Didáctica Desarrolladora, Innovación.

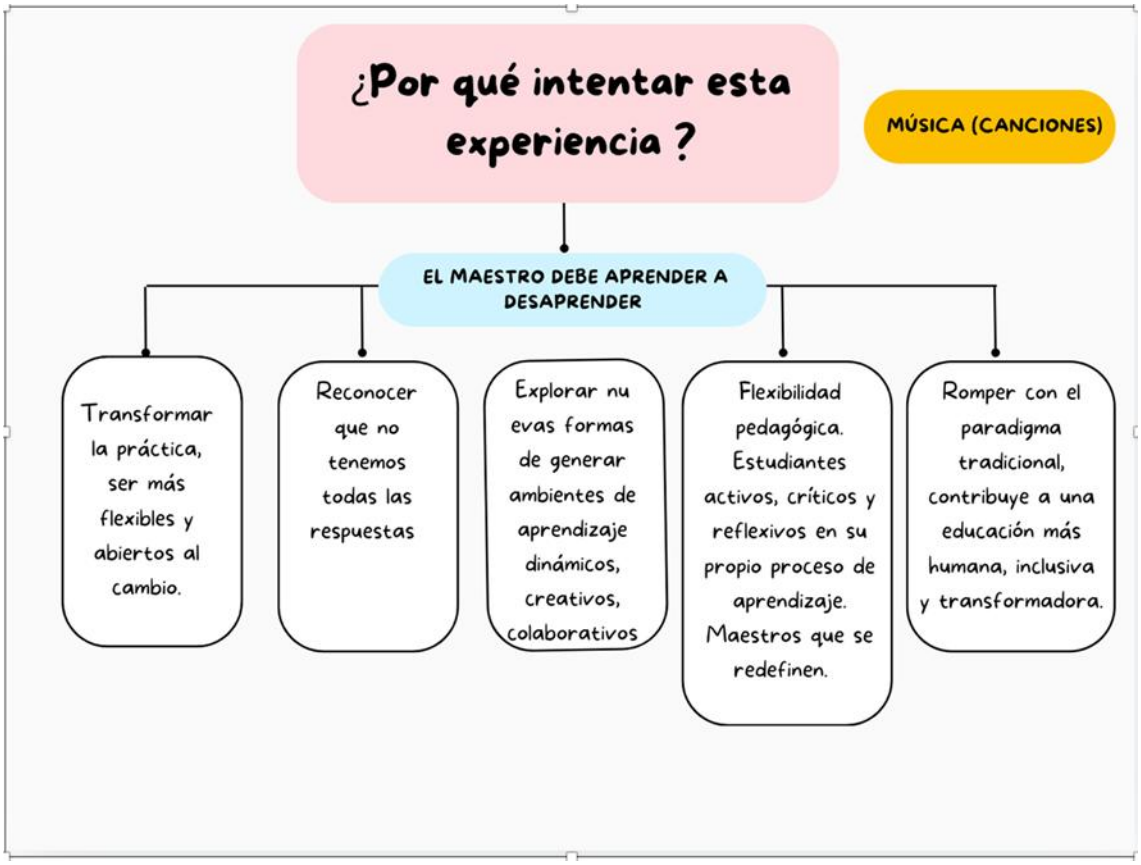
INTRODUCTION

The present work arises from the conviction of exploring the creation of learning environments that foster cognitive and emotional flexibility, promoting collaborative learning between teachers and students. The purpose was to generate a space where both students and teachers would dare to discover, dialogue, and build knowledge together, promoting the active role of students in their training.

The focus of this experience is justified by the need for teachers to abandon traditional practices that perceive knowledge as a static element. Instead, adopting more dynamic and open perspectives is essential, where obsolete practices are unlearned, and new ways of approaching reality and the teaching-learning process are relearned.

Figure 1. Learning to unlearn.

https://doi.org/10.56294/piii2025453



Source: own elaboration.

The central objective was to experiment, through music, with divergent methodologies that would contribute to the development of cognitive skills associated with the use of ICT. This approach was innovative and disruptive in contrast to traditional methodologies. The experience was guided from the perspective of Developmental Didactics, which allowed for deeper learning, both in conceptual and emotional terms.

The results obtained revealed interesting findings about the learning dynamics, the obstacles faced, and the learning built up throughout the course. This paper will describe the context, the activities carried out, the reflections on the processes generated, and the conclusions derived from this innovative experience.

Context of the experience

The experiment was conducted at the Inter-American University for Development (UNID), Valle de Chalco campus, with 24 fourth-semester students with a Degree in Education in “Cognitive Development Associated with ICT.” Of this group, 23 students are women, and one is a man. Under the approach of Developmental Didactics, the course adopted an innovative and disruptive format entitled “Listen, Learn, Create! Cognitive Development with Rhythm and Technology”, the purpose of which was to

https://doi.org/10.56294/piii2025453

explore divergent ways of integrating music and information and communication technologies (ICT) into the learning process, promoting creativity, critical thinking and problem-solving.

The students were asked to develop projects based on their chosen songs, which triggered the whole learning experience. These projects worked collaboratively in teams organized by affinities and involved multiple challenges, including strengthening higher cognitive skills and developing instrumental competencies related to ICT tools. It is essential to point out that, throughout the class sessions, areas for improvement were identified that had nothing to do with the subject matter. Still, from a formative assessment perspective, they were addressed because they were related to various aspects inherent to their training as education graduates.

Figure 2. Diagram of the context of the experience.

Source: own elaboration.

The final product was a digital portfolio, which served not only as a repository of course evidence but also as a teaching tool for learning and developing digital skills. The students created these portfolios on various digital platforms, such as blogs and web pages, highlighting creativity and technology integration. In addition, the portfolio was a source of self-assessment and reflection, fostering the development of socio-emotional skills such as collaboration, assertive communication, and the management of emotions within group dynamics.

https://doi.org/10.56294/piii2025453

Learning to unlearn

Education in the 21st century faces one of its most significant challenges: the need for teachers to unlearn old practices and adapt to an emerging educational paradigm is more in line with the current demands of society. For years, the education system has been anchored in a traditional model that conceives knowledge as something static, with the teacher as the central figure, the transmitter of information, and the student as a passive receiver. This approach focused on memorization and standardized evaluation, has left little room for the development of critical, creative, and collaborative skills that are fundamental in the digital age.

Unlearning involves much more than abandoning old techniques or methodologies. It is a process that requires introspection and the ability to recognize that, as teachers, we do not have all the answers. This transition towards a new educational paradigm requires us to become more flexible and open to change, willing to explore new ways of generating learning environments where the student is the protagonist of their educational process. In this sense, continuous training is no longer an option but an obligation. Teachers must constantly evolve, not only acquiring new knowledge but also adapting their pedagogical practice to respond to the needs of students in a dynamic and interconnected world.

In this sense, Lewin (2024) points out that "unlearning does not imply erasing or eliminating knowledge, but rather letting go of old ideas, beliefs or practices that are no longer useful to make room for new ways of thinking and acting. It is an active and conscious process that allows us to adapt flexibly to a constantly changing world".

Working from learning ecologies, which recognize the interconnection of different learning environments (physical, digital, formal, and informal), is key to this transformation. In this regard, Barrón (2006, p. 195) defines learning ecologies as "the set of contexts found in physical or virtual spaces that provide learning opportunities. Each context comprises a unique configuration of activities, material resources, personal relationships, and the interactions that arise from them".

So, for innovation to be generated, transformation in the classroom requires that teachers be willing to transform their habits, thinking, and attitudes (Carbonell, 2007). This means, among other things, leaving aside the position of supreme authority in the classroom and becoming a guide and companion in the process of discovery and construction of knowledge. In this new paradigm, teachers must be willing to learn with their students, fostering a horizontal relationship where constant interaction and dialogue are the primary tools.

Pedagogical flexibility is essential in this process, allowing teachers to adapt to the particularities of each group and context. Betting on dynamic, creative, and collaborative learning environments not only transforms the way students learn but also redefines the role of the teacher. Educators must dare to discover and discover themselves in this educational adventure. In doing so, they not only enrich their

professional practice but also encourage their students to become active, critical, and reflective agents in their learning process.

In conclusion, unlearning to relearn is an urgent necessity in today's teaching. Teachers who dare to break with the traditional paradigm not only respond to the challenges of a constantly evolving society but also open the door to new opportunities to build a more humane, inclusive, and transformative education.

Rebuilding from the perspective of developmental didactics

In the process of deconstructing and reconstructing teaching thought, teachers must ask themselves from where they observe reality and how they interpret it. In this sense, taking a clear pedagogical position not only enriches educational practice but also offers a direction that guides educational intervention. In this experience, we have adopted the principles of critical pedagogy, as it allows us to carry out a more profound and more transformative analysis of educational practices. This pedagogy, based on the idea that education is a political act, invites teachers to question the systems of power and oppression that operate in classrooms and in society to create learning spaces that promote equity, social justice, and the empowerment of students.

From this critical perspective, the experience presented is articulated through developmental didactics, a pedagogical approach which, although it will not be the subject of in-depth analysis in this space, it can be pointed out that:

[... it is based on the ideas of Lev Semionovich Vigotsky set out in his Theory of the historical cultural development of the human psyche. It recognizes that man develops culture as a social being within a group, and education can play a crucial role both in developing and inhibiting the integral personality of the student, which is conceived as the unity between the cognitive, the affective, and the volitional (Amador, 2020, pp.40-42).

Therefore, the above is fundamental to understanding the conception of the educational experience described here. Developmental didactics focuses on the integral growth of the student, not only in cognitive terms but also in their emotional, social, and metacognitive development.

Five central characteristics of this approach (Zilberstein, Olmedo, 2015) coincide with our conception of the educational act. Firstly, special emphasis is placed on the process. Beyond the traditional obsession with immediate results and grades, developmental teaching seeks to help students understand their learning process, developing metacognitive skills that allow them to reflect on how they learn and not just what they know.

This approach fosters autonomy and the ability to continue learning independently throughout life.

https://doi.org/10.56294/piii2025453

Secondly, student active participation is key. In this approach, students cease to be passive recipients of knowledge and become protagonists of their own learning. Collaborative work, the exploration of authentic problems, and the creation of solutions are promoted. Students make decisions about their process, which fosters their sense of responsibility and belonging.

A third characteristic is the integration of knowledge, which seeks to overcome the fragmentation of knowledge that prevails in many traditional educational systems. Instead of approaching disciplines in isolation, this approach promotes interconnection between different areas, providing students with a more holistic and meaningful understanding of the world around them.

The development of higher cognitive skills constitutes a fourth central characteristic of developmental didactics. This approach is not satisfied with the memorization of information but seeks to cultivate skills such as critical thinking, analysis, synthesis, and evaluation. In an increasingly complex world, it is vital that students develop these skills to navigate, interpret, and respond to information critically and creatively.

Finally, contextualization of learning is a key principle in this approach. Activities and content are not presented in an abstract way but are connected to the students' experiences and realities, allowing learning to be more relevant and applicable. By relating academic content to the context of students' lives, deeper and more motivating learning is promoted.

An additional concept of developmental didactics that deserves independent attention is self-education, which implies the development of each student's internal movement toward autonomous learning. This principle is directly related to the idea that the educational process is not limited to the classroom but extends to the student's daily life, allowing him or her to continue learning and developing independently.

In short, the deconstruction of the traditional educational paradigm that has prevailed for decades in our teaching practices is a fundamental task. The transition towards new ways of generating more dynamic, collaborative, and student-centered learning environments not only implies the adoption of new pedagogical approaches but also a profound process of unlearning old practices. Critical pedagogy and developmental didactics offer valuable paths for this transformation, placing the student at the center of the process and betting on an education that is truly meaningful, contextualized, and oriented towards the integral development of students.

The use of music as a pedagogical tool

The choice of music, specifically songs, as a pedagogical device in this educational experience responded to the need to explore innovative forms of teaching that would connect with the students' interests and emotions. The aim was to transform the classroom into a more dynamic, creative, and

meaningful space where learning would emerge from interaction with materials loaded with symbolism and meaning.

Therefore, this section offers a brief explanation of the concept of pedagogical devices, as it is fundamental to understanding the didactic strategy implemented. Then, some reasons will be presented that justify the choice of music as a pedagogical device in this experience.

A pedagogical device can be understood as a set of strategies, tools, and resources that are intentionally integrated to facilitate the educational process. According to Asprilla and Guardia (2007, p. 212), "the pedagogical device is understood as an artifice: a set of combined things that is used to do or facilitate a job for a special function." In this sense, it is not just an isolated tool but the interaction of various elements that fulfill a specific function in learning.

Armella and Grinberg (2012, p. 113) expand on this idea by pointing out that "the notion of a pedagogical device refers to a complexity of elements that, at a certain moment, make up a certain educational reality." This implies that the device not only includes materials or physical resources but also the interactions, prior knowledge, educational objectives, and social dynamics that are generated in the academic context. In this case, music was used as a pedagogical device to foster creative and reflective learning through the creation of meaningful experiences for the students.

About the music or songs, some of the reasons for their use are listed below:

• Songs are stories. They are narratives; they are inherent to human beings; through them, we communicate, safeguard our memory, express our feelings, and relate to others; with words, we build and rebuild the world. There is a polysemy of meanings in the statements and in the stories that are created, and that reflect those worlds and the experiences that arise in them (Hernández, 2023).

• Music is part of human intelligence. For a long time, and up to the present day, there has been a narrow idea of human intelligence, fundamentally centered on rational, logical thought. As a result, education has focused primarily on the development of linguistic and mathematical knowledge. As teachers, we must seriously address the need to create spaces in school for emotional learning and the development of expertise in the affective and relational fields. Art, in this sense, occupies a role of utmost importance, given that it has the quality of connecting and engaging feelings, emotions, and affections, deeply humanizing the process of development of subjects (Palacios, 2006).

- Songs humanize us. As an inseparable part of the integral education of the human being, music humanizes us and is an indisputable component of the humanization process. Art through music is an exclusively human activity; human beings are the sole bearers of all aesthetic relationships; objects are not beautiful in themselves, but they awaken aesthetic feelings and sensations in human beings, which are the result of their education and the social environment in which they develop (Blanco, 2020).

https://doi.org/10.56294/piii2025453

• Songs are a reflection of a specific context at a particular time. Songs are a cultural manifestation that reflects the social, political, and emotional context of a specific era. Through their lyrics, melodies, and styles, they capture the feelings, values, and issues that prevail at a particular time, functioning as a window into the collective experiences of a society. Songs not only communicate messages, they also preserve the historical memory of key moments, providing an artistic and emotional interpretation of the events that shape a community or a generation.

Songs are triggers for discovery. Songs are potent triggers for discovery, especially for the young.

People, as they allow them to identify concepts, words, and phenomena in a more meaningful way. By listening carefully, students can find new meanings and reflections that previously went unnoticed. Many young people are not used to delving into the lyrics of songs, and the simple act of stopping to listen to them carefully opens up a world of possibilities for them to question, analyze, and discover ideas, emotions, and realities that they may never have considered. This approach generates a process of discovery in which songs become an educational resource that enriches their understanding of the world and themselves.

The use of music as a pedagogical device in this experience was based on the intention of generating an innovative learning environment, far from traditional formality, where students could relate to knowledge in a more meaningful way. The songs served as a dynamic medium, loaded with symbolism, to awaken in the students their capacity for reflection, creativity, and discovery. Through this approach, music was not only an educational resource but a meeting point between the interests of the students and the pedagogical objectives. The aim was to foster a horizontal relationship between teacher and students, in which the priority was not the mere fulfillment of the curriculum but the creation of meaningful experiences that would allow both students and teachers to discover themselves and their environment. This experience demonstrates how the use of music in the classroom can transform the teaching-learning process, making it more human, fun, and enriching.

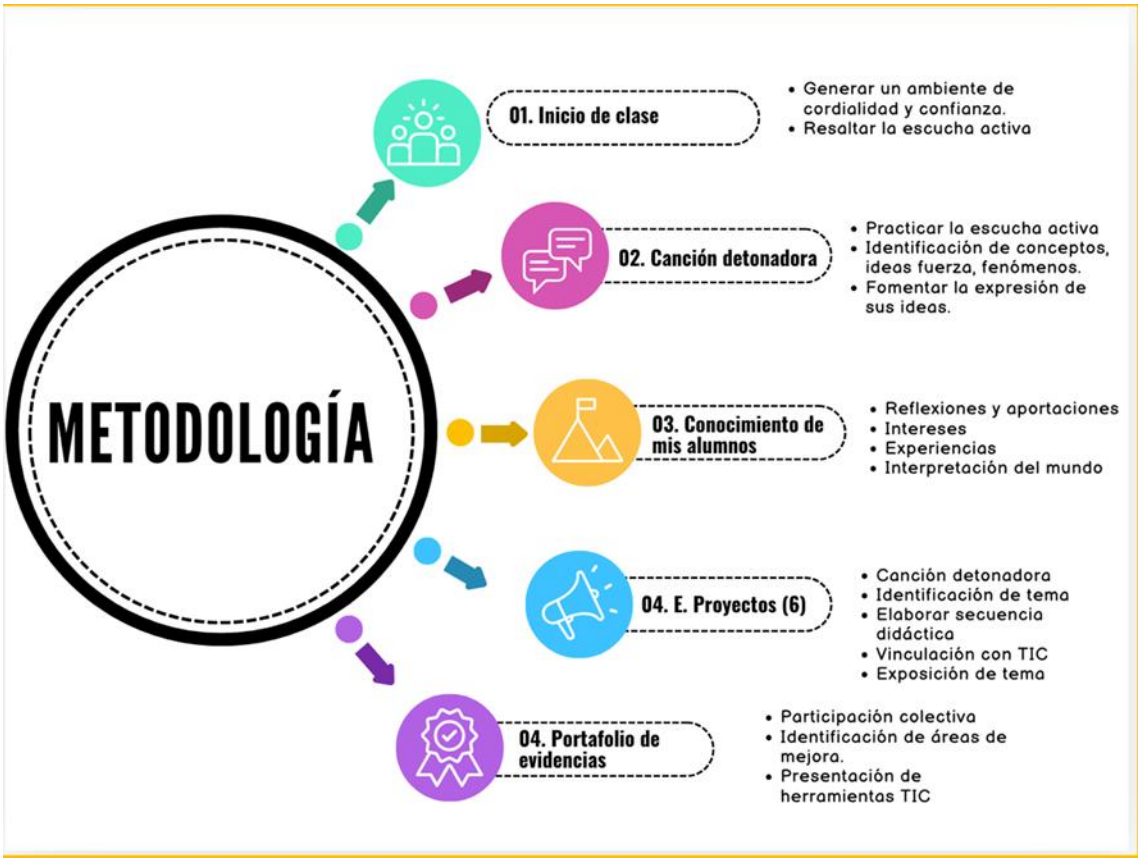
EXPERIENCE METHODOLOGY

The methodology implemented in this educational experience was fundamentally aimed at contributing to the development of a set of cognitive skills essential for pedagogical training, such as analysis, synthesis, metacognition, problem solving, creativity, critical thinking and divergent thinking. Through innovative music-based activities, students were challenged to identify key issues, phenomena or ideas, which allowed them to exercise their ability to analyze and synthesize complex information. These activities also fostered critical and divergent thinking by requiring them to reflect from different perspectives and generate creative responses, all within a pedagogical context.

The development of these cognitive skills was directly linked to the use of disruptive digital tools. The students, organized into teams, worked on transmedia projects where they applied their problem-

solving and evaluation skills to the strategic selection and use of digital technologies. This integration not only allowed them to put their creativity and decision-making skills into practice, but also prepared them to use ICT with an ethical and professional approach, aligned with the objectives of their pedagogical training.

Figure 3. Diagram of the methodology implemented.



Source: own elaboration.

The methodology focused on collaboration and the creation of creative projects, taking a song chosen by the students as a starting point. From this, they identified a key theme, phenomenon, problem or idea that served as a trigger for their imagination, creativity and pedagogical skills. This approach challenged them to apply the diverse knowledge and skills they had acquired as education graduates. Organized into teams, the students designed teaching sequences in which they integrated disruptive digital technologies, creating transmedia products that reflected the pedagogical approach of each project.

During the thirteen sessions of the course, the class began by reproducing the following dynamic: An environment of attention and active listening was encouraged, the video of a song was shown and then the students contributed the concepts, phenomena or key ideas they identified in the song, they wrote

them on the board, based on this material, they discussed what they had discovered, they expressed opinions, points of view, they debated, they gave examples, etc.

After that, doubts were resolved, specific points of the project were clarified, identified areas for improvement were addressed, additional information was provided depending on the theoretical needs of the students or a project was presented (the presentation was made every two weeks).

This stage of the experience was extremely enriching because it allowed for dialogue, for the students to express themselves, to identify the symbolism of their words, the body language in the dynamics during the participation, to discover their experience through the participations and the construction and meaning of meanings in relation to their reality, undoubtedly and according to the results, it was a phase of the experience that both students and teacher enjoyed.

Some of the songs that were shown and that were the trigger for this phase of the experience were:

- Kim De Los Santos - Tomatero
https://youtu.be/HaFNPOyCGW8?si=V5qaaItYOuKqZnbz
- La Sonor Matancera - Que dichos es
https://youtu.be/jxcBh7YE9NQ?si=DH_4GoPzzfmSM0LX
- El Haragán y Compañía - El No Lo Mató ft. Alex Lora
https://youtu.be/3yMn1EcZr4c?si=34xCLRZX5D6p14XM
- No tengo tiempo – Heavy Nopal
https://youtu.be/VaxjLwTvbU4?si=-Vw0pW55TqDUlgY5
- Luis Pérez Meza – El Barzón
https://youtu.be/LSTw6C5AKd0?si=bA2iWcaYZvMPk23D
- MC Luka – Lupita´s Taco Shop
https://youtu.be/4i0gvXX_RMs?si=xxO84iawDlsEEoY6
- Pedro Navaja - Jazz at Lincoln Center Orchestra with Wynton Marsalis feat. Rubén Blades
https://youtu.be/UibAE_x6NM8?si=ytfNAIx7Cwpt9KdT
- Aquellas Pequeñas Cosas - Cuba Le Canta A Serrat - Somos Amigos
https://youtu.be/04iHVAWpziE?si=UyqWnUnpe_M3mLAw
- Joan Manuel Serrat - Cantares (Caminante, No Hay Camino)
https://youtu.be/8tHLw8FHlCE?si=EinnvbJMqcGBlC0l
- Belanova - Rosa Pastel
https://youtu.be/bUkJLkoh3kA?si=CF3Ef6pR0qZpbCf4
- Soda Stereo - En La Ciudad De La Furia
https://youtu.be/VoGwvVoaoCw?si=Vho0GoG77IuSL_Mo

Description of the Project Activities

To carry out this project, the students had to follow these instructions:

1. Selection and analysis of a song: Each team had to integrate a screenshot of their selected song and its lyrics and research general information about the author, the context of the song, or relevant data.

2. Identification of concepts and pedagogical argumentation: From their selected song, they had to identify a concept, key idea, or social phenomenon that they should address in a pedagogical way.

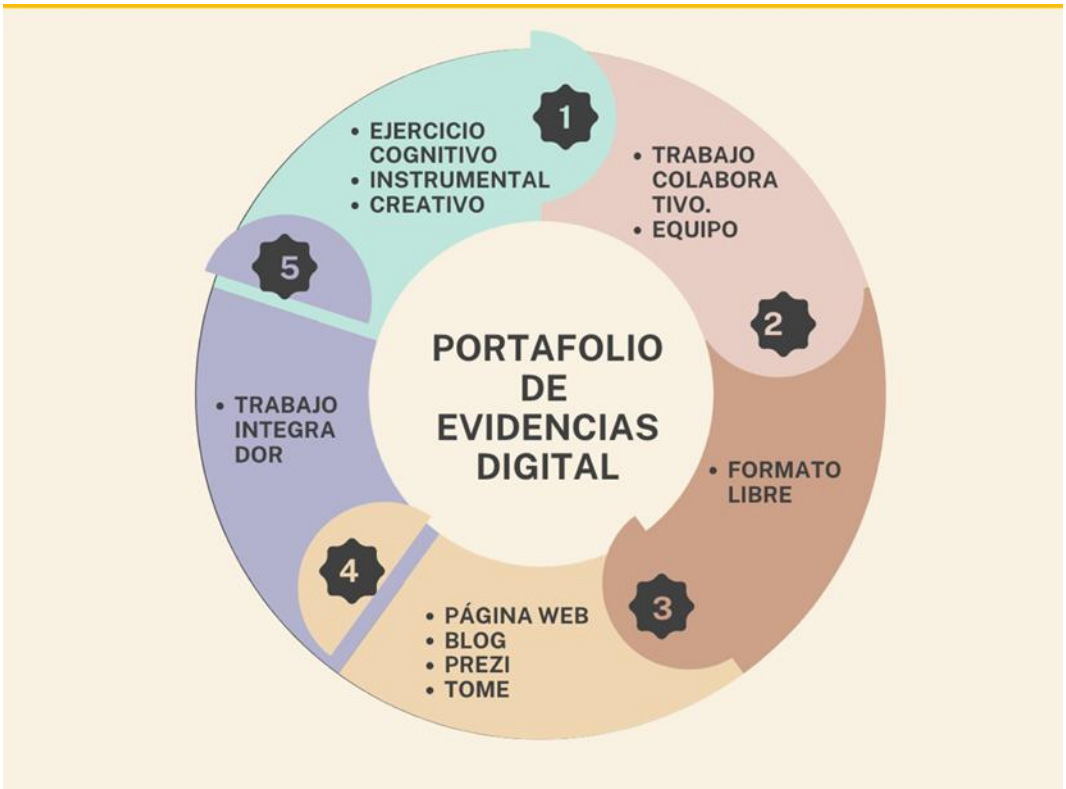
3. Research and development of the topic: They had to research and delve into the selected topic or issue. The intention was to promote technological research skills.

4. Design of a teaching sequence. The students had to design a teaching sequence to develop a class to address the previously selected topic. For this activity, they were given a format called "Guide for the organization of activities with ICT" to structure the development of the activities. It is important to point out that in this phase of the project, they faced various challenges such as the appropriate setting of objectives, the design of activities from a specific didactic approach, identifying suitable forms of evaluation from a formative perspective, and of course, the technological tool to be integrated to contribute to the learning environment designed in the didactic sequence.
5. Integration of an ICT tool: Select digital tools to create a product or exercise that enhances the designed learning environment and provides skills or opportunities for a reflective and critical approach to the selected issue.

Final Evidence: Digital Evidence Portfolio

The portfolio of evidence was the final product of the course, which had to be produced as a team. This digital portfolio served as a didactic tool to identify weaknesses and strengths in the contribution to developing the cognitive and instrumental skills already mentioned (Moreno-Fernández & Moreno-Crespo, 2016); it had a free format. The flexibility of the format allowed students to explore and use novel and disruptive tools, fostering creativity and the advanced use of technologies. This was an exercise that integrated all the activities carried out.

Figure 4. Integrative evidence. Digital portfolio.

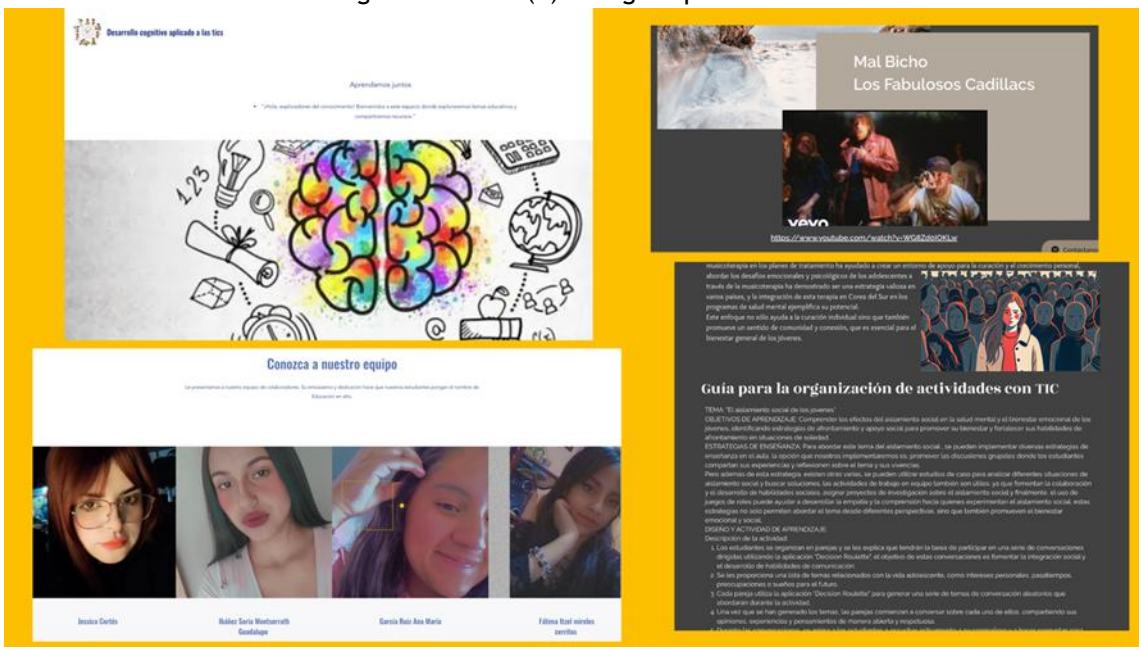


https://doi.org/10.56294/piii2025453

Fuente: elaboración propia

The methodology used in this course not only focused on the development of cognitive skills and the strategic use of ICT, but also confronted students with a series of complex and multidimensional challenges that reflected their training as future educators. The students had to work on crucial aspects of their discipline, such as the elaboration of planning formats, the formulation of clear and coherent objectives, and the implementation of teaching methodologies appropriate to the context of their practice. Likewise, the ethical and reflective use of artificial intelligence was promoted, challenging students to integrate this technology into their teaching proposals, always considering its impact and social responsibility.

Figure 5. Views (1) of digital portfolios.

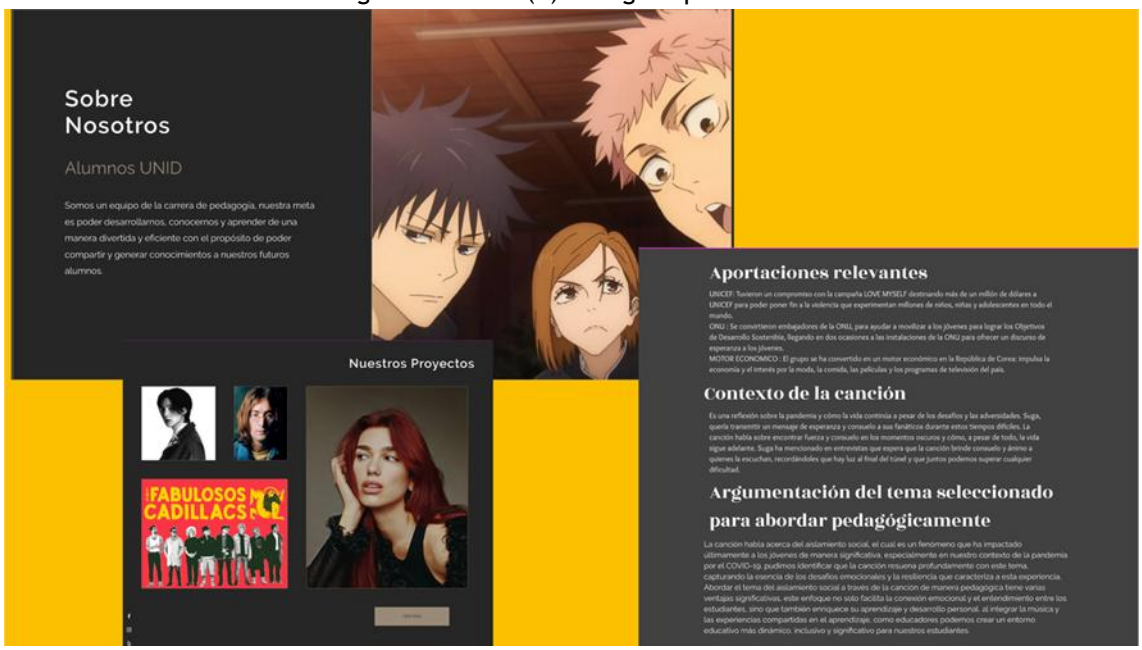


Source: own elaboration.

The methodological structure of the course was based on the principles of developmental teaching, which allowed learning to be focused on active and dynamic processes, where the students were the protagonists of their own development. However, this methodology was also enriched by contributions from Guy Brousseau's Theory of Didactic Situations. In particular, the concept of the “a-didactic situation” stood out, a key moment in which the teacher intentionally withdraws from the teaching situation and allows the student to take ownership of the problem. This approach encourages an

autonomous problem-solving process, where the student, faced with a challenge, enters into a "strategy game" that encourages them to find solutions through independent research and informed decision-making (Chavarría, 2006).

Figure 6. Views (2) of digital portfolios.



Source: own elaboration

This approach not only encouraged the development of higher cognitive skills, but also led to deep reflection by the students on their own learning process. The students were able to take responsibility for solving real problems, applying not only their prior knowledge, but also their critical analysis and creative problem-solving skills. This led to a greater internalization of the contents and a practical application that transcends the academic sphere, connecting theory with pedagogical practice.

Regarding the evaluation of these projects, a rubric was used to guide the students' actions, avoiding it representing a mechanism of control and grade allocation. As has been implicitly pointed out, the idea is to move from a paradigm that emphasizes accreditation to one that prioritizes learning. The most important thing was the process of formative evaluation developed throughout all the weeks that the course lasted.

RESULTS

To present the results of this educational experience, we opted for an approach that would allow us to directly capture the students' "voice," obtaining their perceptions and appreciation of the course. To achieve greater objectivity and a faithful representation of their experiences, a Google form (17 closed-ended and eight open-ended questions) was designed and applied to explore various aspects of the experience. This approach allowed us to obtain a more complete and richer vision of the impact of the methodology used.

https://doi.org/10.56294/piii2025453

The experience itself was challenging and complex but also extremely enriching and fun because it required attending to various aspects that had not been considered, such as the elaboration of planning formats, the creation of objectives, and the design of didactic methodologies, up to the integration of artificial intelligence with an ethical sense. The students were protagonists in their learning process.

However, as in any innovative educational process, there were successes, confusion, and errors. From a critical perspective, these elements are inevitable and valuable. Errors and difficulties are an integral part of any learning process. Far from being seen as mistakes, they should be seen as opportunities to restructure what has been done and build new knowledge to be well capitalized throughout the subject. Below is an analysis of the information obtained from the students through the form. This analysis was carried out based on four dimensions, with the intention of the students reflecting meaningfully on the lessons learned and their perceptions about the challenges faced, the strategies employed, and the achievements attained during the course.

1. Identification of positive and negative aspects of the experience:

POSITIVE ASPECTS	**NEGATIVE ASPECTS**
o Innovation in the use of songs and ICT for learning. o Development of cognitive and socio-emotional skills (analysis, synthesis, teamwork, empathy, etc.). o The activities were interesting and encouraged creativity, reflection, and participation. o The students valued the use of new technologies and the possibility of applying what they had learned in their teaching practice. o The teaching methodology was appreciated as enriching and innovative, and they emphasized that they would apply it in other contexts.	o Difficulties with the clarity of the instructions and the objectives of the activities. o Some students experienced problems with responsibility in teamwork. o There were moments of confusion and lack of collaboration on the part of some teammates. o There was a lack of improvement in the structure of the instructions and a lack of clarity in the objectives of the activities. o Lack of interaction at certain points in the course, which affected collaborative work.

2. Identification of emotions during the experience:

POSITIVE EMOTIONS	**NEGATIVE EMOTIONS**
o **Satisfaction:** The students expressed satisfaction with the	o **Frustration:** Some students mentioned frustration due to

https://doi.org/10.56294/piii2025453

methodology, highlighting the opportunity to learn in a different and novel way. o **Interest:** Several mentioned that the dynamics with songs and ICT aroused their interest and motivated them to participate actively. o **Empathy:** The students highlighted the importance of teamwork and how they learned to collaborate and empathize with their classmates.	unclear instructions or the lack of participation of some classmates. o **Confusion:** There was confusion at times regarding the tasks and how to carry them out.

3. Identification of similarities and differences in opinions regarding the experience:

SIMILARITIES	**DIFFERENCES**
o The majority of the students agreed that the activities involving songs and ICT were innovative and useful for their development. o Several highlighted the relevance of collaborative work, although they mentioned that it was not always effective. o There was consensus that the methodology helped to improve their cognitive and ICT skills.	o Some students found teamwork more useful, while others saw it as a challenge due to the lack of responsibility of some members. o Opinions on the clarity of the instructions varied; while some mentioned that they were clear, others suggested improvements in communication.

4. Extraction of main ideas:

• Innovation and creativity: The methodology used, which combined songs and ICT, was perceived as innovative and creative, providing students with new ways of learning.

• Challenges in collaborative work: Although teamwork was seen as positive, it also presented challenges due to some classmates' lack of responsibility and commitment.

• Clarity of instructions: There was a clear need to improve the accuracy of instructions to avoid confusion and improve the quality of results.

• Impact on professional practice: The students emphasized that what they learned will significantly impact their teaching practice, as they will apply the tools and methodologies in future educational contexts.

This exercise was considered the best way to reflect on the results because it comes from the students' information, trying to overcome the subjectivity of the teacher of the subject. This analysis offers an

https://doi.org/10.56294/piii2025453

overview of the students' experiences and perceptions, identifying achievements and improvement areas in the methodology applied during the course.

Reflections from the teacher

• Connection and Authenticity: This experience allowed me to discover the facets and gestures of possibility in my students and capture their voice and sense of what they feel and think. Observing them as subjects with faces has made the need for genuine encounters, contact, and relationships evident.

Difficulties in Autonomy: Many students face problems when working on projects that require autonomy. They prefer mechanical and utilitarian activities, where "what they should do" is indicated, which limits their capacity for self-exploration and active learning.

Artificial Intelligence and Cognitive Skills: It is essential to advance in using artificial intelligence in the classroom, as its application has been limited to searching for and copying information. This occurs without the mediation of various cognitive skills necessary to generate and convert information into knowledge and formulate genuine questions, which impoverishes the learning process.

• Socio-emotional factors: The diversity of socio-emotional factors that affect students hinders their mutual relationship and prevents harmonious and profitable collaborative work. Addressing these aspects is crucial to fostering a more inclusive and effective learning environment.

• Growth and Communication: The experience was enriching, as it allowed me to discover myself and my students in a more genuine, close, and enriching training and communication process for all. This connection improved the dynamics of the classroom and fostered more meaningful learning.

Strengthening of Learning Processes: It is necessary to advance in this educational experience to enhance processes that allow students to confront their limitations, imagination, and creativity. This will help them learn from their context, interests, and needs.

• Fun and Shared Learning: As a teacher, I enjoyed and learned with them, which highlights the importance of emotional connection and shared learning in the educational process.

CONCLUSIONS

This experience was driven by the need to generate different and innovative learning environments. Although a methodological stance based on developmental didactics was adopted, the aim was to move away from traditionalist classes, which tend to be centered on formality and rigidity. Instead, a dynamic and fun space was created, where the most important thing was to meet the curricular objectives and get to know the students more profoundly. The teacher-student relationship was built from a horizontal perspective, where discovery and genuine interaction were essential. Through the use of musical language, loaded with symbolism and meaning, a learning environment was generated that not only allowed us to explore new forms of teaching but also to discover each other in this process of knowledge construction.

REFERENCES

https://doi.org/10.56294/piii2025453

1. Amador, F. (2020). Didáctica desarrolladora en educación básica formación integral en el proceso de enseñanza-aprendizaje. En revista Revista de Cultura Cientifica. No. 135, enero-marzo, pp 40-45.
   https://www.revistacienciasunam.com/images/stories/Articles/135/pdf135/135A04.pdf
2. Armella, J., Grinberg, S. (2012). ¿Hay un hipertexto en esta clase? Dispositivos pedagógicos, tecnología y subjetividad. En revista Signo y pensamiento. Vol.31 no.61 Bogotá Jul/Dic. 2012.
   http://www.scielo.org.co/scielo.php?script=sci_arttext&pid=S0120-48232012000200007
3. Asprilla, L., De la Guardia, G. (2007). El dispositivo pedagógico: una visión desde la música. En Nómadas (Col), núm. 27, octubre, pp. 210-221 Universidad Central Bogotá, Colombia.
   http://www.redalyc.org/articulo.oa?id=105116595016
4. Barron, B. (2006). Interest and Self-Sustained Learning as Catalysts of Development: A Learning Ecology Perspective. En revista Human Development.
   http://www.life-slc.org/docs/barron-self-sustainedlearning.pdf
5. Blanco, A. (2020). La importancia de las Artes en la educación de la nación y el individuo. En revista Debates por la Historia, vol. 8, núm. 1, pp. 17-40. Universidad Autónoma de Chihuahua.
   https://www.redalyc.org/journal/6557/655768522002/html/
6. Carbonell, J. (2007). La aventura de innovar. El cambio en la escuela. España: Ediciones Morata.
7. Chavarría, J. (2006). Teoría de las situaciones Didácticas. En cuadernos de investigación y formación en educación matemática. Año 1, Número 2
   https://www.unige.ch/fapse/clidi/textos/teoria de las situaciones didacticas.pdf
8. Hernández, C. (2023). Estrategias Educativas para Desarrollar Narrativas de Cibercultura y Aprendizaje: una contribución a la Alfabetización Digital Docente. Tesis de Doctorado, UNAM.
   https://tesiunam.dgb.unam.mx/F/2VL7VTYERT1XENHMXG7H9LRHGLX1SGXJCV75TRBM5LU9AHXNG2-07942?func=full-set-set&set_number=260591&set_entry=000001&format=999
9. Lewin, L. (2024, 10 de septiembre). Desaprendizaje: la clave del futuro educativo. INFOBAE
   https://www.infobae.com/opinion/2024/09/10/desaprendizaje-la-clave-del-futuro-educativo/
10. Moreno-Fernández, O., y Moreno-Crespo, P. (2016). El portafolio digital como herramienta didáctica: una evaluación crítica de fortalezas y debilidades. En Revista de Humanidades, 30 (2017). p. 11-30. ISSN 1130-5029
    https://dialnet.unirioja.es/descarga/articulo/5810070.pdf
11. Palacios, L. (2006). El valor del arte en el proceso educativo. En revista Reencuentro, núm. 46, agosto, Universidad Autónoma Metropolitana Unidad Xochimilco Distrito Federal, México.
    http://www.redalyc.org/articulo.oa?id=34004607
12. Zilberstein, J., Olmedo, S. (2015). Didáctica Desarrolladora: posición desde el enfoque histórico cultural. En Educación y Filosofia, Universidad de Uberlandia, v. 29, n. 57, p. 61 - 93, ene./jun. ISSN 0102-6801.
    https://www.researchgate.net/publication/299375954_DIDACTICA_DESARROllADORA_POSICION_DESDE_EL_ENFOQUE_HISTORICO_CULTURAL

FINANCIAL SUPPORT
None.

CONFLICT OF INTEREST
None.

CONTRIBUTION OF AUTHORSHIP
Conceptualization: Samuel Lizardi, Guadalupe López.
Data curation: Samuel Lizardi, Guadalupe López.
Formal analysis: Samuel Lizardi, Guadalupe López.
Investigation: Samuel Lizardi, Guadalupe López.
Methodology: Samuel Lizardi, Guadalupe López.
Project administration: Samuel Lizardi, Guadalupe López.
Writing – original draft: Samuel Lizardi, Guadalupe López.
Writing – review and editing: Samuel Lizardi, Guadalupe López.