

THE EDUCATIONAL VIDEO GAME FOR THE PROMOTION OF TRADITIONAL CUBAN MUSIC AMONG CHILDREN AND TEENADGERS

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Abstract

This article presents the design and development of the educational video game, conceived as a tool for the promotion and preservation of traditional Cuban music of the Son genre among children and adolescents. The proposal combines cultural content with contemporary game mechanics, generating an immersive and didactic experience. Its pedagogical foundations, playful structure, and potential impact on the formation of cultural awareness from an early age are described.

Keywords: *video game, educational video game, gamification, culture, traditional Cuban music, Cuba, interactive technologies, playful teaching.*

INTRODUCTION

Traditional Cuban music constitutes an essential component of the nation's intangible heritage, acting as a vehicle for collective memory, cultural identity, and social cohesion. Among its most representative expressions is the They are Cuban, a musical genre that synthesizes African and Hispanic influences and whose evolution has accompanied the country's historical and sociopolitical processes. However, in the contemporary context, marked by increasing media globalization and the predominance of foreign cultural products, there is a progressive disconnect between new generations and these indigenous musical expressions [1].

This generational-cultural gap is accentuated by the scarcity of educational resources that, using an updated pedagogical approach, manage to convey this content in a meaningful, playful way that is in tune with the communication codes of today's youth. The dissociation between traditional teaching formats and contemporary forms of cultural consumption poses an urgent challenge for the active preservation of heritage [2].

In response to this problem, the project *The Route of the Son* developed in collaboration with the Center for Interactive Technologies of the University of Informatics Sciences (UCI), proposes the creation of a recreational-educational platform aimed at promoting Cuban genre of music through the interactive language of video games. This initiative stems from the recognition of video games not only as a means of entertainment, but also as a cultural mediation tool and pedagogical device, capable of activating processes of symbolic appropriation, meaningful learning and identity construction.

The project is part of an emerging movement in Latin America that seeks to articulate technology, education, and local culture through innovative, inclusive, and participatory approaches. In this sense, this research not only describes the video game design process but also analyzes its theoretical foundations, methodological strategies, and potential impact in educational and community contexts. It thus proposes a contribution to the interdisciplinary field of video game studies – educational video games with a cultural focus, with particular emphasis on the socio-technological dimension of intangible heritage [3].

The Route of the Son its main objective is to stimulate interest in traditional Cuban music among children and adolescents through an interactive adventure. Players symbolically travel across the country on the so-called “Son Island,” discovering the history, instruments, performers, and songs that shaped this iconic genre.

DIDACTIC DESIGN AND GAME MECHANICS

The video game's educational design is based on a modular structure composed of a set of interrelated minigames, each with specific learning objectives and distinct mechanics that address diverse learning styles (visual, auditory, kinesthetic). This playful architecture responds to a logic of progression in which the user, by overcoming challenges, accesses new content and levels of increasing complexity, thus promoting meaningful learning and sustained motivation [4].

Below are the main game mechanics, as well as their function within the video game's overall educational system:

1. Trivia (questions and answers)

Type of mechanics: Cognitive / Multiple Choice

Pedagogical objective: Evaluate and reinforce acquired knowledge about the history, exponents, and sociocultural contexts of Son.

Logical structure:

- Selection interface with several questions per level.
- Each question has 3 or 4 answer options, of which only one is correct.
- Immediate feedback with brief textual feedback (reinforcement or clarification).
- Scoring and time system to encourage efficient performance.

Educational justification: Stimulates declarative memory and critical thinking through the recognition and retrieval of contextualized information.

2. Runner musical

Type of mechanics: Skill / Reaction time / Motor coordination

Pedagogical objective: Reinforce active listening through interaction with musical elements and cultural.

Logical structure:

- The character automatically moves through an environment that represents sound and visual landscapes of Cuba.
- Obstacles appear synchronized with the rhythm of a Son piece, which the player must avoid or use strategically.
- Collecting themed objects (instruments, records, cultural icons) that award points or additional information.
- Educational justification: It increases musical sensitivity, fosters sustained attention, and strengthens the emotional connection to cultural content through sensory immersion.

3. Memory (card association)

Type of mechanics: Visual and auditory memory / Semantic association

Pedagogical objective: Stimulate working memory by associating elements related to musical heritage.

Logical structure:

- Board with hidden cards that the player must turn over in turns.
- When pairs are found, a short animation or explanatory musical fragment is activated.
- Pairs can combine images (instruments, characters) with sounds, texts either dates.

Educational justification: It reinforces the recognition and conceptual association between different representations of Sound, integrating multisensory stimuli.

4. Piano Tiles (adapted musical version)

Type of mechanics: Coordination / Rhythm / Tactile or keyboard interaction

Pedagogical objective: Facilitate melodic recognition and the characteristic rhythm of Son through active performance.

Logical structure:

- Descending panel where “keys” (notes or measures) fall to the rhythm of a traditional song.
- The player must press them at the exact moment to keep the melody flowing.
- Free practice or scoring execution modalities, with feedback on accuracy rhythmic.

Educational justification: It involves the body in the musical learning process, connecting perception, action and implicit knowledge.

INNOVATION AND CULTURAL APPLICATION

The video game is conceived as a cultural mediation tool that promotes immersive and playful learning processes, articulating heritage content with interactive dynamics aimed at identity building. Through visual and audio elements characteristic of the Cuban imagination, the proposal fosters not only knowledge retention but also the symbolic appropriation of heritage from an early age. This methodological strategy, based on gamification, allows for the exploration of the relationship between culture, education, and technology, while contributing to the development of a sense of belonging in different population segments. The thematic selection, centered on indige-

nous cultural expressions, strengthens the connection between subjects and their sociocultural environment, expanding the scope of learning beyond the school setting [5].

SOCIO-CULTURAL APPROACH AND POPULATION PROJECTION

The video game is conceived as a cultural mediation tool that promotes immersive and playful learning processes, articulating heritage content with interactive dynamics aimed at building identity in diverse social contexts. Far from being limited to a one-way transmission of knowledge, the gaming experience stimulates the subject's active participation, facilitating processes of meaning-making where culture is experienced, recreated, and reinterpreted.

Through a careful integration of visual, audio, and narrative elements representative of Cuban culture—such as traditional musical rhythms, iconic urban and rural settings, and archetypal characters—a symbolic environment is constructed that fosters both knowledge retention and the critical appropriation of cultural heritage. The methodological proposal, based on gamification, transforms learning into a dynamic, motivating experience deeply connected to users' sociocultural reality [6].

From a population perspective, video games are not only targeted at a specific age group, but also allow for the exploration of identity processes in different social groups, including children, adolescents, and young adults. By fostering the recognition and appreciation of one's own cultural expressions, they contribute to strengthening community ties, promote a sense of belonging, and stimulate reflection on the role of culture in building citizenship.

In this sense, innovation lies not only in the incorporation of digital technologies, but in their strategic use to activate teaching and learning processes based on local cultural references. This is an expanded pedagogical experience, where play and symbolism are articulated within an educational project with a territorial impact and the potential for replication in other sociocultural contexts [7].

GENERAL STRUCTURE OF THE GAME SYSTEM

The minigames are integrated into a narrative progression system where the player travels through different regions of Cuba, each associated with specific cultural content. Access to new regions depends on completing objectives within the

minigames, allowing for constant feedback between gameplay progress and knowledge acquisition.

Additionally, it incorporates an achievement system, an educational log (where acquired knowledge and unlocked curiosities are stored), and an accessible interface that respects universal design principles to ensure inclusion and ease of use.

STYLE, GAME DESIGN, AND IMMERSIVE EXPERIENCE

The video game's visual and audio style responds to a logic of cultural coherence, seeking to generate an immersive atmosphere that speaks directly to the roots of Son as an artistic expression and an identity symbol of Cuban culture. From a user-centered design perspective, the game's overall aesthetic has been carefully crafted to evoke the warmth, rhythm, and vitality inherent to Son's symbolic universe, utilizing a warm color palette, traditional settings, and visual elements reminiscent of neighborhoods, plazas, traditional musical instruments, and traditional clothing.

This approach allows to articulate a immersive and traditional gameplay, in which the player not only "controls" an avatar, but rather subjectively projects themselves into a playful environment that feels familiar, emotional, and evocative. This immersion is enhanced by an original or adapted soundtrack, which reproduces representative styles of Son, integrating harmonic progressions, rhythmic patterns, and native timbres such as the tres, marímbula, and claves.

Pedagogical approach to design

The game system incorporates contemporary pedagogical techniques based on the gamification (gamification) and the experiential learning, prioritizing the player's active participation in knowledge construction. Interaction is not limited to responding to stimuli or overcoming challenges, but rather promotes exploration, discovery, association, and symbolic experimentation, establishing bridges between cultural information and emotional experience.

Every component of the design – levels, mechanics, rewards, progression – aligns with principles of meaningful learning, which allows the content to not be perceived as external or obligatory, but as an integral part of an experience that combines entertainment with the appropriation of knowledge.

Emotional and cultural integration of the player

One of the key principles of design is the high integration with the target audience, conceived not as a passive recipient, but as a cultural actor with agency. The goal is for the player to recognize themselves in the content, be moved by the music, identify with the landscapes and characters, and actively participate in the rescue and revaluation of heritage. In this sense, the game not only teaches about Son, but also contributes to revitalize collective memory, to strengthen the sense of belonging and foster pride in the shared cultural heritage [8, 9].

The design, therefore, aims for an expanded transmedia experience: what the player experiences within the virtual environment can be transferred to practices, knowledge, and values outside the game, multiplying its educational and sociocultural impact.

PROJECTION AND INNOVATION AT A REGIONAL KEY

This video game is positioned as a pioneering proposal within the emerging landscape of Cuban and Latin American educational video games, aimed at rescuing, preserving, and disseminating cultural values from playful, inclusive, and technologically advanced perspectives. Its local-centric approach — both in terms of content and aesthetic, musical, and symbolic references—constitutes a deliberate act of creative resistance to the hegemony of globalized narratives and a firm commitment to cultural sovereignty in the digital realm.

In this context, innovation is not limited to the technical or graphic, but resides in its capacity to propose an alternative model of education and entertainment that engages with the realities, knowledge, and emotions of the communities it addresses. This model integrates affective, cognitive, and social dimensions and aligns with the tenets of critical education, situated learning, and cultural pedagogy.

From a medium and long term perspective, the game establishes a methodological and conceptual precedent for future developments focused on other cultural expressions endemic to the region. In doing so, it opens a path for the Construction of a Latin American ecosystem of educational video games, in which cultural diversity, digital inclusion and community participation function as the articulating axes of design, implementation and evaluation.

Furthermore, its replicable and adaptable potential makes it a strategic benchmark for educational institutions, cultural centers, and developers interested in creating products that combine pedagogical value, sociocultural relevance, and emotional impact.

In short, the video game not only represents an innovation in the field of educational technology, but also acts as a intergenerational transmission vehicle, a platform for symbolic empowerment and a catalyst for new ways of imagining learning from our own, our local, and our meaningful perspective.

CONCLUSIONS

The development of a recreational-educational platform focused on Cuban Son, as The Route of the Sound, demonstrates the potential of video games as cultural mediators to revitalize intangible heritage by generating experiences that foster symbolic appropriation and identity recognition in children and young people. This proposal articulates gamification techniques with a pedagogical design based on meaningful learning and multisensory stimulation, integrating musical and cultural knowledge in an engaging way and adapted to contemporary communication codes, which favors lasting learning that is emotionally linked to the player. Beyond its technological dimension, the video game emerges as a sociocultural intervention strategy with territorial impact, adaptable to school, community, and museum contexts thanks to its modular structure and inclusive approach, reinforcing the link between culture, citizenship, and technology. Likewise, the video game *The Route of the Son* It is positioned as a replicable benchmark in Latin America for preserving endemic cultural expressions through interactive technologies, promoting a regional ecosystem of educational video games with its own identity. Finally, this initiative contributes interdisciplinarily to the field of educational technology by integrating critical pedagogy, digital design, and cultural studies, offering conceptual and practical foundations for future research exploring the transformative use of ICTs in heritage education.

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ОБУЧАЮЩАЯ ВИДЕОИГРА ДЛЯ ПОПУЛЯРИЗАЦИИ ТРАДИЦИОННОЙ КУБИНСКОЙ МУЗЫКИ СРЕДИ ДЕТЕЙ И ПОДРОСТКОВ

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Аннотация

Представлены дизайн и разработка образовательной видеоигры, задуманной как инструмент для продвижения и сохранения традиционной кубинской музыки среди детей и подростков. В игре сочетаются культурный контент и современные игровые механики, создавая иммерсивный и дидактический опыт. Описаны его педагогические основы, игровая структура и потенциальное влияние на формирование культурного сознания с раннего возраста.

Ключевые слова: видеоигры, образовательная видеоигра, геймификация, традиционная музыка, культура, традиционная Кубинская музыка, Куба, интерактивные технологии, игровое обучение.

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