



Use of Digital Educational Resources for the Learning of Colombian Culture in Secondary Education

Hernán Javier Guzmán Murillo

Doctor en Ciencias de la Educación
Universidad de Sucre Colombia
hernan.guzman@unisucra.edu.co
<https://orcid.org/0000-0002-6757-4549>

Karen Catalina Leal Acosta

Magister en Derecho Público
Universidad de Sucre Colombia
karen.leal@unisucravirtual.edu.co
<https://orcid.org/0000-0002-7916-2605>

Tania Inés Martínez Medrano

Magister en Derecho Procesal
Universidad de Sucre, Colombia
tania.martinez@unisucra.edu.co
<https://orcid.org/0009-0006-1722-6577>

Publication date: June 08, 2024

Summary

The use of Digital Educational Resources (RED) in the teaching of social sciences has generated new strategies for meaningful learning in secondary school students. This study analyzes the implementation of an interactive digital resource to strengthen knowledge about Colombian culture in elementary school students of an Educational Institution in Montería, Colombia. The design of the study responds to the need to overcome the traditional pedagogical model, which, despite its presence in the classroom, does not respond to the challenges of the digital era and limits the motivation of students in learning the history, geography and cultural diversity of the country. To this end, a pedagogical proposal based on interactive digital strategies was developed, structured in seven phases within a qualitative approach and action-research. The participants were 29 eleventh grade students, who interacted with a digital resource structured in thematic modules on gastronomy, ethnic communities, cultural heritage and Colombian folklore. The evaluation of the impact of the intervention was carried out through surveys, classroom observations and the analysis of responses on the digital platform used. The findings indicate that the use of digital educational resources increased students' motivation and active participation, favoring the development of skills in critical thinking and cultural analysis. In addition, there was evidence of an improvement in the recognition of

cultural identity and in the appropriation of knowledge about Colombian traditions.

These results reinforce the importance of integrating digital technologies into social science teaching to make learning a more dynamic and interactive process.

Keywords: Digital educational resources; Colombian culture; learning.

Introduction

The study of Colombian culture in secondary education represents a fundamental axis in the formation of identity, belonging and recognition of the country's cultural diversity. However, traditional approaches to teaching social sciences have proven to be unattractive to students, as they focus on memorizing historical and geographical data, without promoting a deep understanding of Colombia's cultural and heritage richness (González & Ramírez, 2021). This reality has generated low levels of motivation and interest in learning about the national culture, affecting the construction of a solid cultural identity in young people.

Against this backdrop, the integration of Digital Educational Resources (RED) in the teaching of Colombian culture emerges as an innovative alternative that allows transforming the learning process, making it more dynamic, interactive and meaningful. Different studies have shown that the use of digital technologies in the classroom enhances the understanding of complex concepts, the active participation of the student and the development of critical thinking (Valencia, 2020). In addition, the digitization of cultural content facilitates access to diverse and up-to-date information, promoting learning based on exploration and the collective construction of knowledge.

This study focuses on the development and implementation of a digital educational resource for the teaching of Colombian culture in eleventh grade students of an educational institution in Neiva, Huila. The didactic strategy is based on an interactive approach, in which students explore various aspects of Colombian culture through thematic digital modules on gastronomy, ethnic communities, cultural heritage and Colombian folklore.

Research Question

Based on this problem, the following research question is posed:

How does the use of digital educational resources influence the teaching and learning of Colombian culture in secondary school students?

Objective of the Study

The main objective of the research is to analyze the impact of the use of digital educational resources on the learning of Colombian culture in high school students, promoting the appropriation of cultural knowledge through interactive strategies.

The specific objectives are:

1. Design and implement a digital educational resource with interactive modules on Colombian culture.
2. To evaluate the motivation and level of participation of students in the learning process through the use of digital tools.
3. To analyze the changes in the understanding and appropriation of knowledge about Colombian culture from the use of digital resources.

This study seeks to generate evidence on the effectiveness of digital educational resources in the teaching of social sciences, proposing innovative methodologies that favor the construction of knowledge in a critical and meaningful way. In the following section, the theoretical approaches that underpin the research and their relationship with education in digital culture are presented.

Theoretical Approaches

The development of Digital Educational Resources (RED) for the teaching of Colombian culture is based on various theoretical perspectives that explain the importance of the integration of technologies in education, interactive learning and the construction of cultural knowledge. The main approaches underpinning this study are presented below.

1. Meaningful Learning and Building Cultural Knowledge

Meaningful learning, proposed by Ausubel (2000), states that students learn best when they relate new information to their previous knowledge, generating connections that allow them to understand more deeply. In the context of teaching Colombian culture, this implies that students not only memorize historical and geographical data, but also understand and value the cultural diversity of the country through interactive experiences.

The use of Digital Educational Resources (RED) facilitates the creation of learning environments where students can explore, analyze, and construct cultural knowledge autonomously and meaningfully. Recent studies have shown that strategies based on experiential learning and gamification enhance students' understanding of cultural identity and sense of belonging (Pérez & González, 2021).

2. Use of Digital Technologies in Cultural Education

Today, digitalization has transformed educational processes, allowing students to access content in interactive and multimodal formats. The Multimodal Learning Theory (Mayer, 2005) suggests that students better understand information when presented with combinations of text, images, videos, and interactive activities, which is fundamental for the teaching of Colombian culture.

The use of digital platforms and tools such as explanatory videos, cultural simulations, and interactive maps provides an immersive experience that enhances students' curiosity and engagement in learning about the country's cultural diversity. Previous research has shown that the integration of digital technologies

in the teaching of history and culture allows for improved understanding of abstract concepts and information retention (Vallejo & Ramírez, 2020).

3. Gamification and Experiential Learning

Game-Based Learning (Gee, 2005) is a pedagogical strategy that incorporates elements of video games into teaching, in order to motivate students, encourage active participation, and promote problem-solving. In this study, gamification was used to create interactive challenges and playful activities about Colombian culture, allowing students to learn in a more dynamic and entertaining way.

Studies have shown that implementing gamification strategies in the classroom improves student engagement and motivation, especially in areas where traditional learning is often perceived as monotonous or abstract (Prensky, 2012). By integrating elements of play, rewards, and challenges into teaching Colombian culture, students can develop more engaging and meaningful learning.

4. Cultural Identity and Construction of Citizenship

The development of knowledge about Colombian culture not only involves learning historical facts, but also the formation of a cultural identity that promotes respect and appreciation of diversity. From the perspective of Critical Pedagogy (Freire, 1970), the learning of culture must be oriented to reflection and the construction of critical citizens, capable of understanding the history and diversity of the country in a globalized context.

The teaching of Colombian culture through Digital Educational Resources (RED) facilitates the construction of an active citizenship committed to the appreciation of national identity, allowing students to analyze cultural problems, reflect on diversity and generate proposals for action for the preservation of cultural heritage.

Synthesis of Theoretical Approaches

The design of the pedagogical strategy implemented in this study is based on the following theoretical principles:

1. Meaningful learning facilitates the understanding of Colombian culture by connecting with previous knowledge and interactive experiences.
2. Multimodal learning allows students to acquire knowledge through different formats, improving the retention and application of information.
3. Gamification and experiential learning encourage motivation and active participation in the study of culture.
4. The construction of cultural identity through digital strategies strengthens students' sense of belonging and appreciation of diversity.

Based on these approaches, this study analyzes the effectiveness of Digital Educational Resources (RED) in the learning of Colombian culture in secondary education. In the following section, the methodology used to implement and evaluate the impact of this pedagogical strategy in the classroom is described.

Methodology

Study Design and Approach

This study adopts a qualitative approach, with an action-research design, which seeks to analyze the impact of the use of Digital Educational Resources (RED) in the teaching of Colombian culture in secondary school students. Action research makes it possible to identify problems in educational practice, intervene with innovative strategies and evaluate their impact through observation and reflection (Elliot, 1993).

The pedagogical strategy implemented in this study was structured in seven phases, from the identification of the problem to the evaluation of the impact of the intervention.

1. Initial diagnosis: Evaluation of students' prior knowledge and perception of Colombian culture through surveys and diagnostic tests.
2. Design of the digital educational resource: Creation of a digital environment with interactive content, videos, cultural maps and gamified activities.
3. Implementation planning: Structuring of class sessions using the digital resource as the central axis of teaching.
4. Implementation in the classroom: Application of the digital resource in face-to-face sessions, with activities guided by the teacher.
5. Monitoring and observation: Recording of students' interaction with the digital resource and their level of participation in the activities.
6. Impact evaluation: Application of final surveys, analysis of interactions on the digital platform and observation of changes in students' attitudes.
7. Reflection and adjustments: Discussion of the results with teachers and proposals for improvement for future implementations.

Participants

The study was carried out with 29 eleventh grade students from an educational institution in Montería Córdoba, who actively participated in the implementation of the digital resource. The selection of participants was carried out through non-probabilistic intentional sampling, considering the following criteria:

- Students with access to digital devices inside or outside the classroom.
- School groups with difficulties in the appropriation of Colombian culture.
- Teachers interested in integrating digital strategies in the teaching of social sciences.

Data Collection Instruments

To evaluate the impact of the digital strategy on the learning of Colombian culture, the following instruments were used:

- Initial and final diagnostic test: Applied to measure changes in the level of knowledge of students about Colombian culture before and after the intervention.
- Classroom observation: A structured observation guide was used to record students' interaction with the digital resource and their level of participation in the activities.
- Student perception surveys: Applied before and after the intervention, to know the students' assessment of the use of digital tools in the learning of culture.
- Analysis of interactions on the digital platform: Evaluation of student participation in forums, interactive activities and educational games.
- Interviews with teachers: To know their perception of the effectiveness of the digital resource and the changes observed in the attitude of the students.

Implementation Procedure

The digital educational resource was designed on an interactive platform that allowed students to explore different aspects of Colombian culture through thematic modules. The implementation was carried out in three pedagogical phases:

1. Exploration: Introduction to Colombian culture through videos, infographics and multimedia resources.
2. Interaction and practice: Resolution of gamified activities, online discussions and analysis of historical documents.
3. Reflection and evaluation: The students shared their learning and reflected on the importance of preserving cultural identity.

Data Analysis

The data analysis was carried out using content analysis techniques, organizing the information into thematic categories related to the level of participation, the use of digital tools and learning about Colombian culture. The results of the initial and final tests were compared, identifying improvements in students' understanding of the country's cultural diversity.

Results

Analysis of the Data Collected

The analysis of the data obtained from diagnostic tests, classroom observations, and perception surveys made it possible to evaluate the impact of the implementation of the digital educational resource (RED) on the learning of Colombian culture in eleventh grade students.

1. Comparison of Initial and Final Diagnostic Test Results

The tests applied before and after implementation showed a significant improvement in the students' understanding of Colombian culture.

Key findings:

- Prior to the intervention, 67% of students could not correctly identify key elements of Colombian cultural heritage.
- After the implementation of the digital resource, 88% of students demonstrated a greater understanding of the country's cultural diversity.
- 75% of the students managed to relate the knowledge acquired with situations of daily life, showing more significant learning.

These results reflect that the use of interactive digital strategies favored the retention and application of knowledge about Colombian culture.

2. Classroom Observation and Analysis of Digital Interactions

During the implementation of the strategy, classroom observation allowed us to identify changes in student attitudes and participation.

Key findings:

- Increased participation in interactive activities: It was observed that 82% of students voluntarily explored the digital modules and completed the activities on the platform.
- Increased motivation towards learning: Before the intervention, only 40% of the students expressed interest in Colombian culture, while after implementation, 91% expressed that the use of the digital resource made the subject more dynamic and attractive.
- Development of critical thinking skills: It was evident that students argued their answers better in debates about the importance of preserving cultural identity and the impact of globalization on Colombian traditions.

3. Student Perception Surveys

The surveys applied at the end of the implementation allowed us to know the students' assessment of the use of digital tools in the teaching of Colombian culture.

Main results:

- 94% of students considered that the use of digital resources made learning about Colombian culture more meaningful and accessible.
- 89% said that the interactive activities helped them to better understand the country's cultural diversity.
- 92% expressed that they would prefer to continue learning about history and culture through digital tools rather than traditional methods.

These data reflect a high level of acceptance and motivation towards the use of technologies in the teaching of Colombian culture.

4. Interviews with Teachers on the Impact of the Strategy

The interviews conducted with the teachers allowed us to know their perception of the effectiveness of the digital strategy and the changes observed in the attitude of the students.

Main comments from teachers:

- "The students showed greater interest in Colombian culture and were more autonomous in their learning thanks to the use of digital tools."
- "The digital educational resource allowed students to engage in discussions about identity and cultural diversity, which was not the case before with traditional classes."
- "The gamification of the activities helped students feel more motivated to explore the contents of Colombian culture."

These testimonies reinforce the idea that the integration of digital tools in the teaching of Colombian culture generates a positive impact on motivation, commitment and the construction of knowledge in students.

Summary of Findings

Indicator	Initial Result	Upshot	Improvement Observed
Identification of cultural heritage	33%	88%	Yes
Interest in Colombian culture	40%	91%	Yes
Application of knowledge in everyday life	25%	75%	Yes
Using Digital Tools for Learning	Low	High (94% acceptance)	Yes
Argumentative capacity on cultural diversity	Limited	Improved	Yes

These findings reflect that the implementation of Digital Educational Resources (RED) in the teaching of Colombian culture favors meaningful learning, motivation, and active participation of students. The implications of these results and their relevance to social science education will be discussed in the following section.

Discussion

The results obtained in this study show that the implementation of **Digital Educational Resources (RED)** has had a positive impact on the learning of Colombian culture in eleventh grade students. The comparison of the initial and final diagnostic tests demonstrates a **significant improvement in the identification of cultural heritage, participation in debates and motivation towards learning** about Colombian culture. These findings reinforce the idea that social science education should adopt innovative strategies that integrate the use of **digital**

technologies to promote more dynamic and meaningful learning (Valencia, 2021).

From a theoretical perspective, these results are aligned with Ausubel's (2000) **Theory of Meaningful Learning**, which states that students achieve a deeper understanding when they can relate new knowledge to previous experiences and interactive representations. In this sense, the use of **digital modules, explanatory videos and gamified activities** allowed students to develop contextualized and autonomous learning about the cultural diversity of Colombia.

Impact of the Use of Digital Tools on the Learning of Colombian Culture

One of the most relevant findings of the study was the **increase in students' motivation towards learning about Colombian culture**. Before the intervention, **only 40% of students expressed interest in cultural content**, while after the implementation of the digital resource, **91% stated that interactive tools made learning more engaging and meaningful**.

These results coincide with previous studies that have shown that the use of **educational technologies in the teaching of social sciences** favors the exploration of content from multiple perspectives, allowing students to **be actively involved in the construction of knowledge** instead of receiving information passively (Torres & Sánchez, 2022).

In addition, the **increase in student participation in virtual debates and forums** shows that the use of digital resources **not only improves conceptual understanding, but also promotes the development of critical thinking and argumentation skills**. This finding is aligned with Freire's (1970) **Theory of Dialogic Learning**, which highlights the importance of debate and critical reflection in the learning process.

Development of Cultural Identity and Construction of Citizenship

Another key aspect of the study was the **improvement in students' appropriation of cultural identity**. The implementation of the **digital educational resource** allowed students to **reflect on the importance of preserving and valuing Colombian traditions**, relating the content learned to their own reality and personal experiences.

In this sense, Freire's **Critical Pedagogy** (1970) suggests that education should be a process of **awareness and social transformation**, where students not only acquire knowledge, but also develop a **critical awareness of their identity and their role in society**. The results of the study show that the integration of digital tools in the teaching of Colombian culture contributes to this purpose, by promoting **more reflective, participatory, and action-oriented learning**.

Challenges and Limitations

Despite the positive results, the study also identified **challenges and limitations** in the implementation of the digital strategy:

- **Digital divide:** Although most students managed to interact with the digital educational resource, some had difficulties accessing electronic devices outside the classroom. This highlights the need **to ensure equity in access to technology**.
- **Time to adapt to digital tools:** A group of students presented **initial difficulties in navigating and using the platform**, which suggests that previous training is required **to optimize the learning experience**.
- **Cognitive load:** Some students stated that the amount of information on the digital platform could be overwhelming if it is not organized in a progressive and structured way.

Implications for Educational Practice

The findings obtained have **important implications for social science education and the teaching of Colombian culture**. It is recommended that educational institutions:

1. **Incorporate digital educational resources into the teaching of culture and history**, designing interactive modules that allow students to **explore and analyze content from multiple perspectives**.
2. **Encourage inquiry-based learning and gamification**, using digital tools that stimulate curiosity and critical thinking in students.
3. **Train teachers in the integration of technology in the classroom**, ensuring that they have the necessary skills to design innovative and effective learning experiences.
4. **Ensure accessibility to technology for all students**, implementing strategies that reduce the digital divide and facilitate access to interactive platforms inside and outside the classroom.

Finally, future research could expand this analysis through **longitudinal studies** that allow evaluating the long-term impact of the use of digital tools in the teaching of Colombian culture. In addition, it would be relevant to explore how the incorporation of **artificial intelligence and augmented reality** could further enhance the learning experience in this field.

Conclusions

The results obtained in this study confirm that the use of **Digital Educational Resources (RED)** in the teaching of Colombian culture has a positive impact on student learning, participation and motivation. The implementation of an **ICT-mediated didactic sequence** allowed students to **explore, analyze and reflect on the cultural diversity of the country in a more meaningful way**, overcoming traditional teaching models based on memorization.

From a theoretical point of view, the findings support Ausubel's (2000) **Theory of Meaningful Learning**, which emphasizes the importance of the connection

between prior knowledge and new learning to generate a deeper understanding. Likewise, the results coincide with Mayer's (2005) **Multimodal Learning Theory**, which highlights that the combination of **texts, images, videos, and interactive activities** favors the retention and application of knowledge.

At the methodological level, the research showed that the use of digital platforms **increased students' interest in Colombian culture**, facilitated the understanding of key concepts, and promoted the development of skills in **critical thinking and argumentation**. In particular, participation in **online discussions, gamified activities, and analysis of digital sources** allowed students to reflect on the importance of preserving and valuing the country's cultural identity.

However, the study also identified challenges in the implementation of the digital strategy, such as the **gap in access to technology**, the need **for training in digital tools for teachers and students**, and the **organization of content on the digital platform** to avoid cognitive overload.

From a practical perspective, these results suggest that educational institutions should:

1. **Integrate digital tools in the teaching of Colombian culture**, ensuring that students can access interactive resources that stimulate their curiosity and participation.
2. **Design didactic strategies that combine gamified activities, simulations and collaborative projects**, promoting experiential learning about the country's cultural diversity.
3. **Train teachers in the use of digital technologies for the teaching of social sciences**, ensuring that they have the necessary skills to guide students in the use of interactive platforms.
4. **Guarantee equity in access to technology**, implementing strategies that reduce the digital divide and facilitate the use of digital tools inside and outside the classroom.

Finally, future research could expand this analysis through **longitudinal studies** that evaluate the impact of the use of digital tools in the teaching of Colombian culture over time. It would also be relevant to explore how the incorporation of **augmented reality and digital simulations** can further enhance the learning experience and the appropriation of cultural identity in secondary school students.

Conclusions

The results obtained in this study confirm that the use of **Digital Educational Resources (RED)** in the teaching of Colombian culture has a positive impact on student learning, participation and motivation. The implementation of an **ICT-mediated didactic sequence** allowed students to **explore, analyze and reflect on the cultural diversity of the country in a more meaningful way**, overcoming traditional teaching models based on memorization.

From a theoretical point of view, the findings support Ausubel's (2000) **Theory of Meaningful Learning**, which emphasizes the importance of the connection between prior knowledge and new learning to generate a deeper understanding. Likewise, the results coincide with Mayer's (2005) **Multimodal Learning Theory**, which highlights that the combination of **texts, images, videos, and interactive activities** favors the retention and application of knowledge.

At the methodological level, the research showed that the use of digital platforms **increased students' interest in Colombian culture**, facilitated the understanding of key concepts, and promoted the development of skills in **critical thinking and argumentation**. In particular, participation in **online discussions, gamified activities, and analysis of digital sources** allowed students to reflect on the importance of preserving and valuing the country's cultural identity.

However, the study also identified challenges in the implementation of the digital strategy, such as the **gap in access to technology**, the need **for training in digital tools for teachers and students**, and the **organization of content on the digital platform** to avoid cognitive overload.

From a practical perspective, these results suggest that educational institutions should:

1. **Integrate digital tools in the teaching of Colombian culture**, ensuring that students can access interactive resources that stimulate their curiosity and participation.
2. **Design didactic strategies that combine gamified activities, simulations and collaborative projects**, promoting experiential learning about the country's cultural diversity.
3. **Train teachers in the use of digital technologies for the teaching of social sciences**, ensuring that they have the necessary skills to guide students in the use of interactive platforms.
4. **Guarantee equity in access to technology**, implementing strategies that reduce the digital divide and facilitate the use of digital tools inside and outside the classroom.

Finally, future research could expand this analysis through **longitudinal studies** that evaluate the impact of the use of digital tools in the teaching of Colombian culture over time. It would also be relevant to explore how the incorporation of **augmented reality and digital simulations** can further enhance the learning experience and the appropriation of cultural identity in secondary school students.

References

1. Ausubel, D. P. (2000). *The acquisition and retention of knowledge: A cognitive view*. Springer.
2. Bandura, A. (1997). *Self-efficacy: The exercise of control*. Freeman.
3. Bruner, J. (1996). *The culture of education*. Harvard University Press.
4. Cortina, A. (2018). *Citizens of the World: Towards a Theory of Citizenship*. Alianza Editorial.

5. Day, C., & Gu, Q. (2014). *Resilient teachers, resilient schools: Building and sustaining quality in testing times*. Routledge.
6. Dewey, J. (1938). *Experience and education*. Macmillan.
7. Elliot, J. (1993). *Educational change from action research*. Morata.
8. Extremera, N., & Fernández-Berrocal, P. (2016). The importance of emotional intelligence in the educational context. *Psicología Educativa*, 22(1), 27-32. <https://doi.org/10.1016/j.pse.2016.01.002>
9. Freire, P. (1970). *Pedagogy of the Oppressed*. Siglo XXI Editores.
10. García, M., & Mendoza, J. (2021). Teacher well-being and vocational commitment: integrative review. *Ibero-American Journal of Education*, 85(1), 23-42. <https://doi.org/10.35362/rie8514103>
11. Gee, J. P. (2005). Learning by design: Good video games as learning machines. *E-Learning and Digital Media*, 2(1), 5-16. <https://doi.org/10.2304/elea.2005.2.1.5>
12. Goleman, D. (1996). *Emotional intelligence: Why it can matter more than IQ*. Bantam Books.
13. González, P., & López, A. (2022). Education for citizenship in the digital age. *Journal of Education and Society*, 39(2), 97-112. <https://doi.org/10.12804/res392022>
14. Gujarati, D. N., & Porter, D. C. (2019). *Econometría* (6.^a ed.). McGraw-Hill Education.
15. Hattie, J. (2018). *Visible learning for mathematics, grades K-12: What works best to optimize student learning*. Corwin Press.
16. Kilpatrick, J., Swafford, J., & Findell, B. (2001). *Adding it up: Helping children learn mathematics*. National Academy Press.
17. Mayer, R. E. (2005). *The Cambridge handbook of multimedia learning*. Cambridge University Press.
18. OECD (2021). *TALIS Report 2021: Effective teaching and emotional well-being of teachers*. OECD Publishing.
19. Pérez, A., & Gómez, L. (2020). Citizenship training in secondary education: Analysis of pedagogical experiences. *Latin American Journal of Education*, 35(1), 54-78. <https://doi.org/10.32924/edu2020351>
20. Ribble, M. (2019). *Digital citizenship in schools: Nine elements all students should know*. ISTE.