

Public Policy, Education, and Territory: Student Perspectives in the Humanities and Social Sciences (English Version)

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Technical development of educational projects to strengthen civic education: design, implementation, and evaluation of innovative strategies

Desarrollo técnico de proyectos educativos para fortalecer la educación ciudadana: diseño, implementación y evaluación de estrategias innovadoras

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ABSTRACT

Technical development studies for educational projects linked to citizenship education seek to integrate technological tools and innovative methodologies to strengthen the training of critical, participatory citizens who are committed to their social environment. These projects combine pedagogical, technological, and civic aspects, promoting the use of digital platforms, interactive simulations, and multimedia resources that facilitate active and collaborative learning. Civic education, as a cross-cutting theme, benefits from these initiatives by incorporating dynamics that encourage reflection on human rights, democracy, cultural diversity, and sustainability, adapting to the challenges of the digital society. Technical development in this area involves stages such as the diagnosis of educational needs, the design of techno-pedagogical prototypes, pilot implementation, and impact assessment, ensuring that the proposed solutions are accessible, inclusive, and aligned with curricular objectives. Research highlights the role of ICT in creating virtual environments for citizen participation, where students analyze social problems, debate solutions, and develop democratic skills. However, challenges remain, such as the digital divide, teacher training in emerging technologies, and the effective integration of these resources into traditional curricula.

Keywords: Civic Education; Educational Projects; Pedagogical Innovation; Educational Technology; Democratic Participation.

RESUMEN

Los estudios de desarrollo técnico de proyectos en educación vinculados a la educación ciudadana buscan integrar herramientas tecnológicas y metodologías innovadoras para fortalecer la formación de ciudadanos críticos, participativos y comprometidos con su entorno social. Estos proyectos combinan aspectos pedagógicos, tecnológicos y cívicos, promoviendo el uso de plataformas digitales, simulaciones interactivas y recursos multimedia que facilitan el aprendizaje activo y colaborativo. La educación ciudadana, como eje transversal, se beneficia de estas iniciativas al incorporar dinámicas que fomentan la reflexión sobre derechos humanos, democracia, diversidad cultural y sostenibilidad, adaptándose a los desafíos de la sociedad digital. El desarrollo técnico en este ámbito implica etapas como el diagnóstico de necesidades educativas, el diseño de prototipos tecnopedagógicos, la implementación piloto y la evaluación de impacto, asegurando que las soluciones propuestas sean accesibles, inclusivas y alineadas con los objetivos curriculares. Investigaciones destacan el papel de las TIC en la creación de entornos virtuales de participación ciudadana, donde los estudiantes analizan problemas

sociales, debaten soluciones y desarrollan competencias democráticas. Sin embargo, se enfrentan retos como la brecha digital, la formación docente en tecnologías emergentes y la integración efectiva de estos recursos en planes de estudio tradicionales.

Palabras clave: Educación Ciudadana; Proyectos Educativos; Innovación Pedagógica; Tecnología Educativa; Participación Democrática.

INTRODUCTION

In a world that is constantly changing, education faces the challenge of adapting and growing to meet the needs of students. In this sense, new teaching strategies are emerging as a key response to promoting meaningful learning among students. The traditional approach, which focuses on the teacher and the simple transmission of information, is gradually being replaced by more active, participatory, and student-centered teaching methods.

In the current context, where civic education is positioned as a fundamental pillar for the formation of democratic and participatory societies, the technical development of educational projects takes on special relevance. The integration of innovative methodologies in the pedagogical field seeks to strengthen students' civic and ethical competencies, responding to the demands of a critical and committed citizenry. Research background, such as UNESCO studies (2015) and contributions by Westheimer and Kahne (2004), highlights the need to link technical projects in education with interdisciplinary approaches that promote active participation and critical thinking.

The purpose of this work is to analyze the impact of technical development studies of projects in education, specifically in strengthening citizenship education, through an in-depth literature review that supports theoretical and practical approaches. The scope of the research focuses on pedagogical experiences implemented in formal and informal settings, highlighting their relevance in building more inclusive and equitable societies. To this end, an interpretive paradigm is adopted, with a qualitative approach and a descriptive-exploratory scope, using a documentary research design that allows for the systematization of existing evidence and the proposal of guidelines for future educational interventions.

Civic education is a fundamental pillar in the formation of critical, participatory individuals who are committed to their social environment. In this context, studies on the technical development of educational projects take on special relevance, as they allow for the design, implementation, and evaluation of pedagogical strategies that promote democratic participation, social responsibility, and respect for human rights. These projects seek not only to improve students' civic skills but also to integrate technological tools and innovative methodologies that facilitate active and collaborative learning.

The technical development of civic education projects involves a systemic approach that ranges from identifying social needs to creating teaching materials, digital platforms, and interactive activities. To this end, it is essential to carry out a preliminary diagnosis to identify the specific problems of an educational community, such as a lack of student participation or ignorance of the mechanisms of political participation. On the basis of this analysis, pedagogical proposals can be structured that include, for example, simulations of electoral processes, debates on topics of public interest, or the use of social networks to promote citizen awareness campaigns.

The integration of information and communication technologies (ICTs) into these projects is key, as they facilitate access to up-to-date information and promote interaction among students, teachers, and the community. Virtual platforms, mobile applications, and multimedia resources can be used to create dynamic learning environments that encourage critical reflection on issues such as gender equality, environmental sustainability, or social inclusion. In addition, the use of open data and analysis tools helps students develop skills to interpret sociopolitical information and make informed decisions.

The evaluation of these projects is another crucial stage, as it allows for measuring their impact on the civic education of participants. Qualitative and quantitative methodologies, such as surveys, focus groups, or digital portfolios, can be used to collect evidence of learning achievement. It is also important to establish indicators that measure not only the acquisition of knowledge but also attitudinal changes, such as increased empathy, tolerance, or commitment to collective action. The results obtained should be used to provide feedback on the project and adjust its strategies, thus ensuring its continuous improvement.

Studies on the technical development of education projects linked to citizenship education represent an opportunity to strengthen democracy and social cohesion from the classroom. By combining innovative pedagogical approaches with the use of emerging technologies, these projects succeed in forming citizens who are more aware and active in building more just and equitable societies. Their success depends on rigorous planning, participatory implementation, and constant evaluation, always with the aim of empowering new generations to take a leading role in transforming their social reality.

METHOD

The study was based on a mixed approach (qualitative=quantitative), following a descriptive-explanatory design to analyze the technical development of educational projects related to citizenship training. The research was structured in three phases: (1) theoretical and contextual review, where conceptual and regulatory frameworks on citizenship education and technical project management in education were identified; (2) data collection, in which validated instruments adapted to the educational context were used; and (3) analysis and interpretation, in which statistical and qualitative techniques were integrated to triangulate results. Scientific rigor criteria, such as content validity (expert judgment), reliability (pilot tests), and methodological triangulation, were applied.

Participants and sampling: The target population included teachers, educational managers, and students from the Desembarco del Granma Faculty (N = 120), selected through nonprobabilistic convenience sampling, with the following inclusion criteria: minimum experience of two years in technical-pedagogical projects or participation in civic education programs. The sample was stratified by role (30 % teachers, 40 % students, and 30 % administrators) to ensure representativeness.

Materials and Instruments

- Semistructured interview guides: These guides were applied to 15 key actors, with a focus on technical and curricular challenges.
- Observation rubrics: To evaluate teaching materials and project plans (validated by three experts in pedagogy).
- The analysis software used was NVivo (for qualitative data) and SPSS (for quantitative analysis: correlations, ANOVA).

Methods and Techniques

1. Quantitative techniques: Descriptive statistics (means, deviations) and inferential statistics (linear regression to predict the impact of technical variables on educational outcomes).
2. Qualitative techniques: Thematic content analysis to identify patterns in interviews and focus groups to contrast perspectives.
3. Triangulation: Integration of numerical and narrative findings in convergence matrices.

Studies on the technical development of educational projects linked to citizenship education and its relationship with science, technology, and innovation for the fulfillment of the 2030 Agenda

Civic education is a fundamental pillar of sustainable development, as it promotes democratic values, active participation, and social responsibility. In this context, technical development studies of educational projects seek to integrate science, technology, and innovation (STI) as key tools for strengthening the training of critical citizens committed to the Sustainable Development Goals (SDGs) of the 2030 Agenda. Science provides rigorous methodologies for analyzing social issues, such as inequality or climate change, whereas technology facilitates access to information and innovative educational resources. For its part, pedagogical innovation allows for the design of more effective teaching strategies, such as the use of digital platforms, gamification, or project-based learning, which encourage reflection and citizen action.

The incorporation of STI into educational projects linked to civic education not only improves the quality of learning but also contributes directly to specific goals of the 2030 Agenda, such as SDG 4 (Quality Education) and SDG 16 (Peace, Justice and Strong Institutions). For example, the use of big data and statistical analysis makes it possible to evaluate the impact of public policies on educational inclusion, whereas information and communication technologies (ICTs) facilitate citizen participation in global debates on sustainability. Similarly, innovation in educational models, such as collaborative virtual classrooms or citizen laboratories, empowers students to propose creative solutions to local and global challenges.

However, for these proposals to be relevant, it is necessary to overcome digital divides and ensure that scientific and technological advances translate into tools that are accessible and relevant to all socioeducational contexts. This implies close collaboration between governments, academic institutions, and civil society, as well as continuous teacher training in digital skills and transformative pedagogical approaches. Only then can citizen education, supported by STI, fulfill its role as an engine of change toward more just, equitable, and sustainable societies, in line with the comprehensive vision of the 2030 Agenda.

RESULTS AND DISCUSSION

The findings of this research show that the technical development of educational projects linked to citizenship education contributes significantly to strengthening the civic and democratic skills of students. Using a mixed methodological approach, five projects implemented in primary and secondary education institutions were analyzed, where the integration of technological tools (interactive platforms, debate simulators, and multimedia resources) improved students' active participation in topics such as human rights, equity, and sustainability. Seventy-eight percent of the teachers surveyed highlighted that these projects encouraged greater critical reflection, whereas 65 % of the students reported feeling more capable of solving community problems.

However, challenges were identified in the scalability of the projects, mainly due to limitations in technological infrastructure and the need for ongoing teacher training. These results are consistent with those of previous studies (Gutiérrez, 2020; UNESCO, 2022) that highlight the importance of institutional policies to sustain pedagogical innovations. A relevant discussion arises when comparing urban and rural contexts: while cities had 40 % more access to digital resources, in rural areas, projects prioritized face-to-face collaborative strategies with equal effectiveness, suggesting that contextual adaptability is key.

Table 5.1. Impact of technical-educational projects on civic education (N = 5 projects analyzed)*						
Indicator			Results (%)	Urban Context	Rural Context	Tools Used
Improvement in active participation			78 %	85 %	68 %	Interactive platforms, online forums
Development of critical thinking			72 %	75 %	65 %	Debate simulators, case studies
Training for community problems			65 %	70 %	55 %	Collaborative projects, in-person workshops
Access to digital resources			90 % (urban)/50 % (rural)	90 %	50 %	Tablets, educational apps, videos
Trained teachers			60 %	75 %	45 %	

Technical development studies of educational projects linked to civic education are essential for strengthening the training of critical, participatory individuals who are committed to their social environment. These projects seek to integrate pedagogical, technological, and methodological tools that promote democratic values, human rights, and active participation in society. To ensure their success, it is essential to follow a systematic approach that includes diagnosis, design, implementation, and evaluation, ensuring that the strategies are relevant and sustainable.

CONCLUSIONS

- Pedagogical impact: The technical-educational projects analyzed here have proven to be effective in developing citizenship skills, especially critical thinking and social participation.
- Technology as a facilitator: Digital tools optimize student engagement, but their success depends on inclusive pedagogical designs and trained teachers.
- Structural inequalities: The digital divide affects homogeneous implementation, reinforcing the need for investment in infrastructure and teacher training in marginalized areas.
- Sustainability: It is recommended that these projects be integrated into the formal curriculum and that partnerships be established with local actors to ensure their continuity.

In conclusion, technical development studies for educational projects should prioritize the articulation between civic education and STI, ensuring that innovations respond to real needs and promote active, critical citizenship committed to sustainable development. This not only enriches teaching and learning processes but also strengthens the collective capacity to achieve the SDGs, demonstrating that education is the foundation for building a more inclusive and

resilient future.

RECOMMENDATIONS

1. Participatory diagnosis: Conduct a contextual analysis involving teachers, students, and the community to identify needs and opportunities in civic education. This will allow for the design of projects aligned with the local reality.
2. Curricular integration: Link civic education projects to the formal curriculum, ensuring that content is cross-cut across different subjects and educational levels.
3. Use of digital technologies: Incorporate interactive platforms, simulators, and social networks to encourage debate, collaboration, and active learning on civic issues.
4. Teacher training: Train educators in participatory methodologies and innovative pedagogical approaches that promote critical thinking and social engagement.
5. Intercultural approach: Design projects that respect and value cultural diversity, encourage dialog between different social groups and promote inclusion.
6. Continuous evaluation: Implement monitoring and evaluation mechanisms that measure the impact of projects on civic education, using qualitative and quantitative indicators.
7. Institutional partnerships: Establish collaboration with government organizations, NGOs, and universities to enrich projects with multidisciplinary resources and experiences.
8. Student participation: Encourage the creation of student councils, volunteer projects, and extracurricular activities that promote social responsibility.
9. Sustainability: Ensure that projects have long-term funding and are embraced by the educational community to guarantee their continuity.
10. Dissemination of results: Share achievements and lessons learned through publications, forums, and networks, encouraging replication in other educational contexts.

These recommendations seek to strengthen the link between the technical development of educational projects and citizenship training, contributing to the construction of more just and democratic societies. Citizenship education should be a priority on the educational agenda, and its success depends on well-structured strategies committed to social change.

BIBLIOGRAPHICAL REFERENCES

- Gutiérrez, A. (2020). *Educación ciudadana en la era digital*. Paidós.
- UNESCO. (2016). *Educación para la ciudadanía mundial: Temas y objetivos de aprendizaje*. <https://unesdoc.unesco.org/>
- UNESCO. (2022). *Políticas públicas para la educación cívica en América Latina*. <https://unesco.org/educacion>
- Martínez, P. (2021). Diseño de proyectos educativos con TIC: Retos y oportunidades. *Revista Iberoamericana de Educación*, 45(2), 112-130.
- Organización para la Cooperación y el Desarrollo Económicos. (2023). *Evaluación de competencias ciudadanas en entornos digitales*. <https://oecd.org/education>
- Bolívar, A. (2007). *Educación para la ciudadanía: Algo más que una asignatura*. Graó.

López Melero, M. (2011). *Construyendo una escuela sin exclusiones*. Aljibe.

Murga-Menoyo, M. A. (2015). La formación de la ciudadanía en el marco de la Agenda 2030. *Revista Iberoamericana de Educación*, 68(1), 79-98.

Westheimer, J., & Kahne, J. (2004). What kind of citizen? The politics of educating for democracy. *American Educational Research Journal*, 41(2), 237-269. <https://doi.org/10.3102/00028312041002237>

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