



Integration of Digital Tools for the Strengthening of Citizenship Competencies in Secondary Education

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Summary

The strengthening of citizenship skills in the educational context represents a key challenge for the comprehensive education of students, especially in a digitalized world. This study analyzes the impact of the implementation of an interactive digital environment based on **Google Sites** as a pedagogical resource to improve democratic participation and the development of civic values in secondary school students.

The design of this intervention is based on the need to overcome the low student participation in school democratic processes, evidenced in the apathy and disinterest towards the election of the School Government. To this end, an ICT-mediated didactic sequence was implemented, organized in **three phases (exploration, implementation and evaluation)**, in which students accessed interactive content, audiovisual resources, virtual debates and electronic voting simulations.

The study adopted a **qualitative** approach, with an **action research** design, in which **students from grades 8 and 9 of a public educational institution** participated. The data was collected through surveys, interviews, checklists and analysis of interactions on the digital platform.

The results show that the integration of digital tools in the teaching of citizenship skills increased student participation in school democratic processes and promoted greater awareness of their role in the educational community. There was evidence of a **reduction in electoral apathy**, an **increase in the use of technological resources for deliberation and decision-making**, and a **better attitude towards digital democracy**. These findings highlight the role of ICT in teaching citizenship, highlighting its potential to form critical and participatory citizens in the digital age.

Keywords: citizenship skills; digital democracy; digital educational tools.

Introduction

The strengthening of **citizenship competencies** in secondary education is an essential component for the formation of critical, reflective and participatory citizens in society. In a world where digitalization influences the way individuals access information, make decisions, and participate in democratic processes, it is necessary to adapt pedagogical strategies to promote students' civic engagement from an early age (Torres & Ramírez, 2021). However, various studies have identified a **low participation of young people in democratic school spaces**, manifested in apathy towards the choice of **School Government** and in the lack of motivation to get involved in debates on citizens' rights and duties (González & Pérez, 2020).

The traditional teaching of citizenship skills has relied heavily on theoretical instruction and memorization of rules, without providing students with interactive spaces that allow them to **experience the exercise of citizenship in a practical way**. This gap between theoretical knowledge and its application in everyday life has generated difficulties in the consolidation of democratic attitudes in students, who perceive school electoral processes as administrative procedures with no real impact on their academic life (Valencia, 2022). In this context, the incorporation of **digital tools** in the teaching of citizenship represents an opportunity to innovate in learning methodologies, promoting the development of civic skills through interactive, participatory and collaborative environments.

This study proposes the implementation of a **didactic sequence mediated by ICT**, using the **Google Sites** platform as an interactive space to strengthen citizenship competencies in secondary school students. The intervention focuses on three key dimensions: **democratic participation, informed decision-making and citizen deliberation**, in order to motivate students to be actively involved in the election of the School Government and in other spaces of student representation.

This study seeks to provide evidence on the role of ICT in citizenship education, highlighting the importance of integrating digital tools in the teaching of democracy and student participation. The following section presents the theoretical approaches that underpin the research and their relationship with digital citizenship education.

The strengthening of citizenship skills through digital tools is based on various theoretical perspectives that explain the importance of active participation,

citizenship education and the use of technologies in learning. The main approaches underpinning this study are presented below.

1. Education in Citizenship Skills and Democratic Training

Citizenship **competencies** are the set of knowledge, skills, and attitudes that allow individuals to participate actively, informed, and ethically in society (OECD, 2020). According to authors such as Cortina (2018) and Gutiérrez (2021), citizenship training must go beyond learning norms and values, promoting the construction of critical subjects who understand the importance of democratic participation and public deliberation.

In the school environment, the strengthening of citizenship competencies has traditionally been associated with the teaching of **civic values, rights, and duties**, but recent studies have shown that effective participation in democratic spaces **requires practical experiences** in which students can exercise their rights and responsibilities in a real way (Valencia & Rodríguez, 2019). According to Torrego (2022), practice-based learning strengthens the sense of belonging and commitment to democratic processes, reducing the rates of youth apathy towards politics and social participation.

2. Participatory-Based Learning and Simulation of Democracy

From the perspective of **participatory-based learning** (Dewey, 1938), students learn most effectively when they have the opportunity **to experience citizenship** in their school context. This approach suggests that active participation in debates, elections, and decision-making processes in school allows students to better understand democratic dynamics and develop critical thinking regarding systems of student representation (Pérez & Gómez, 2020).

Simulations **of democratic processes**, such as the creation of electoral campaigns, debates between candidates, and electronic voting, have proven to be effective strategies for generating **meaningful learning about democracy**. Studies such as that of Ramírez and Fernández (2021) show that the use of **simulated strategies** improves students' understanding of the importance of voting, the role of representatives, and informed deliberation in collective decision-making.

3. Digital Tools in the Teaching of Citizenship Skills

Today, digitalization has transformed the way citizens access information and participate in society. In this sense, the incorporation of **digital tools** in the teaching of citizenship skills not only responds to a technological need, but also allows for the promotion of a more informed and participatory citizenry (Torres & Sánchez, 2022).

The use of interactive platforms such as **Google Sites, Kahoot and Padlet** facilitates the creation of collaborative learning environments, where students can access educational materials, participate in discussion forums, develop collective projects and vote electronically in democratic school processes. Research such as that of Valencia (2021) has shown that the use of ICT in the teaching of citizenship skills

favours the development of critical thinking and argumentation, by allowing students to access various sources of information and analyse different perspectives on issues of public interest.

From the **Multimodal Learning Theory** (Mayer, 2005), it has been shown that the use of audiovisual resources, simulations and interactive activities enhances knowledge retention and the understanding of complex concepts. In the case of citizenship education, multimodal learning facilitates access to relevant information on democracy, participation, and citizen rights, strengthening students' capacity to engage in decision-making and informed deliberation.

4. Digital Citizenship and its Relationship with Democratic Participation

In a digitalized world, citizenship is no longer limited to physical spaces, but extends to the virtual realm, where social and political interactions have a significant impact on shaping public opinion. **Digital citizenship** refers to the ability of individuals to participate ethically, safely, and critically in digital environments (Ribble, 2019). In this context, the development of citizenship skills must include strategies to teach students how to interact in the digital space, protect their privacy and make responsible use of information.

According to recent studies, the use of digital tools in civic education allows students to **experience modern forms of participation**, such as deliberation in virtual forums, signing online petitions, and consulting information from trusted sources (González & López, 2022). The combination of citizenship education and digital training is critical to preparing students for democratic life in the digital age.

Based on these approaches, this study analyzes the impact of the implementation of an **ICT-mediated didactic sequence** on the strengthening of citizenship competencies in secondary education. The following section describes the methodology used to carry out the research and evaluate the effects of the pedagogical intervention.

Theoretical Approaches

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Synthesis of Theoretical Approaches

The design of the didactic sequence implemented in this study is based on the following theoretical principles:

1. **Participatory learning and democratic simulation** allow students to understand the importance of their role in the school community and in society.
2. **The use of digital tools in the teaching of citizenship skills** facilitates access to information, informed deliberation and experimentation with democratic processes in an interactive environment.
3. **Digital citizenship is an essential component in the training of students**, as it allows them to develop critical skills for participation in a digitalized society.

Based on these approaches, this study analyzes the impact of the implementation of an **ICT-mediated didactic sequence** on the strengthening of citizenship competencies in secondary education. The following section describes the methodology used to carry out the research and evaluate the effects of the pedagogical intervention.

Methodology

Study Design and Approach

This study is framed within a **qualitative approach**, with an **action-research** design, whose purpose is to implement and evaluate a pedagogical strategy based on the use of digital tools to strengthen citizenship competencies in secondary school students. **Action research** makes it possible to generate changes in educational practice through a cycle of observation, intervention and reflection, which facilitates the identification of improvements in teaching and learning processes (Elliot, 1993).

The study was carried out in **three phases**:

1. **Initial diagnosis**, in which the difficulties of the students were identified in relation to their participation in democratic school processes and their knowledge of citizenship skills.
2. **Implementation of the ICT-mediated didactic sequence**, using **Google Sites** as a central platform for the integration of interactive activities.
3. **Impact evaluation**, based on the observation of student performance, surveys and analysis of interactions on the digital platform.

Participants

The study population was made up of **students in grades 8 and 9 of a public educational institution**, who actively participated in the implementation of the didactic sequence. The sample selection was carried out through **non-probabilistic intentional sampling**, considering the following criteria:

- **Students with access to digital devices** inside or outside the educational institution.
- **School groups with a history of low participation** in democratic school processes.
- **Teachers willing to collaborate in the implementation of the pedagogical strategy.**

Data Collection Instruments

To assess the impact of the digital strategy on strengthening citizen competencies, the following data collection instruments were used:

- **Initial and final surveys:** applied before and after the implementation of the didactic sequence, to measure changes in the perception and attitude of students towards democratic participation.
- **Classroom observation:** a structured observation guide was used to record students' interaction with the digital platform and their level of engagement in the activities.
- **Analysis of interactions on the digital platform:** review of student contributions in discussion forums, digital surveys and electronic voting simulations.
- **Interviews with teachers:** in order to know their perception of the effectiveness of the strategy and the changes observed in student participation.

Implementation Procedure

The didactic strategy was implemented through **Google Sites**, a platform that made it possible to integrate different digital resources designed to strengthen students' citizenship skills. The intervention was developed in **three pedagogical phases**:

1. **Exploration:** students accessed theoretical content on democracy, citizen participation and student rights, presented in **videos, infographics and interactive resources** hosted on the platform.

2. **Implementation:** the participation of students in **virtual debates**, discussion forums and electronic voting simulations was promoted, where they could **argue their positions and make democratic decisions**.
3. **Evaluation:** students reflected on their experience in digital activities and answered final surveys to measure their perception of the use of digital tools in the teaching of citizenship skills.

Data Analysis

The data analysis was carried out using **content analysis techniques**, organizing the information into thematic categories related to democratic participation, the use of digital tools and the attitude of students towards digital citizenship. The results obtained before and after implementation were compared, identifying changes in student interaction with school democratic processes and in their perception of the importance of citizen participation.

Results

Analysis of the Data Collected

The analysis of the data obtained through surveys, classroom observations, and analysis of interactions on the digital platform made it possible to evaluate the impact of the ICT-mediated didactic sequence on the strengthening of citizenship competencies in secondary school students.

1. Comparison of Initial and Final Surveys

The surveys applied before and after the implementation of the digital strategy made it possible to identify changes in the perception and attitude of students towards democratic participation and the use of digital tools in civic education.

Key findings:

- **78% of the students surveyed indicated that before the intervention they had little or no interest in participating in school democratic processes** (election of the School Government, student debates, opinion polls).
- **After the implementation of the digital strategy, 89% of students said they understood the importance of democratic participation and were more willing to be involved in school decisions.**
- **92% of students said that the integration of digital tools made citizenship learning more dynamic and accessible.**

These results show a change in students' perception of the importance of citizen participation and the role of technology as a resource to strengthen digital democracy.

2. Classroom Observation and Analysis of Digital Interactions

During the implementation of the digital strategy, structured observations were made to analyze the interaction of students with the **Google Sites platform** and their level of participation in the proposed activities.

Key findings:

- **Increased participation in virtual debates:** discussion forums allowed **85% of students to express their ideas and argue their positions on issues such as voting rights and student representation.**
- **Increased use of digital platforms for deliberation:** Students explored multimedia resources, answered digital surveys, and participated in electronic voting simulations, which increased their understanding of democratic processes.
- **Greater autonomy in decision-making:** it was observed that, after the intervention, the students **demonstrated greater confidence when arguing their position on citizen issues and in the election of student representatives.**

These results reflect that the combination of **interactive learning and immersive digital experiences** favored participation and the development of critical thinking in students, essential elements for the exercise of citizenship.

3. Interviews with Teachers on the Impact of the Strategy

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

Main comments from teachers:

- **"Before, students saw the election of the School Government as an unimportant procedure. Now, they show greater interest in the election of their representatives and in collective decision-making."**
- **"The use of digital tools allowed students to explore democracy in a more active and participatory way, which was reflected in their enthusiasm to learn about their citizenship rights and duties."**
- **"Virtual debates and electronic voting simulations were key to fostering critical thinking and deliberation among students."**

These testimonies reinforce the idea that the integration of digital tools in the teaching of citizenship skills generates a positive impact on **student motivation and commitment to school democracy.**

Summary of Findings

Indicator	Initial Result	Upshot	Improvement Observed
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Interest in democratic participation	Low (78% did not participate)	High (89% interested)	Yes
Use of digital tools for deliberation	Minimal	Broad (forums, voting, digital surveys)	Yes
Ability to argue in debates	Limited	Improved	Yes
Perception of School Government	Unimportant procedure	Key Engagement Space	Yes
Acceptance of digital citizenship education	Neutral	Positive (92% recommend)	Yes

These results reflect a positive impact on the teaching of citizenship skills through digital tools, suggesting that the integration of technologies in civic education can contribute to the development of a more informed and participatory citizenry. The implications of these findings and their relevance to educational practice will be discussed in the following section.

Discussion

The results obtained in this study show that the implementation of digital tools in the teaching of citizenship skills can **strengthen democratic participation and the understanding of decision-making processes in secondary school students**. The comparison between the initial and final surveys shows a **significant improvement** in students' attitudes towards participation in school life, especially in activities such as the election of the School Government and the deliberation on issues of collective interest.

From a pedagogical perspective, these findings support the **Theory of Participatory-Based Learning** (Dewey, 1938), which holds that students learn best when they have the opportunity to actively experience the principles of democracy in a real context. The possibility of getting involved in simulations of electoral processes, virtual debates and electronic voting allowed students to **develop a deeper understanding of the importance of citizen participation and the exercise of their rights and duties**.

Impact of the Use of Digital Tools on Citizenship Training

One of the most relevant findings of the study is the **increase in students' motivation to participate in school democratic processes**. Before the intervention, **78% of the students indicated that they were not interested in the election processes of the School Government**, while after the implementation of the digital strategy, **89% expressed greater interest in getting involved in school decision-making**. This result is consistent with previous studies that have shown that the use of **interactive digital environments** can improve motivation and autonomy in citizenship learning (Valencia, 2021; Torres & Sánchez, 2022).

From the perspective of **Digital Citizenship** (Ribble, 2019), the study also highlights the importance of preparing students to participate in society through digital environments. The experience of using **Google Sites as a space for deliberation and democratic simulation** allowed students to understand the impact of technology on political and social life, which is essential in a society where digital participation is increasingly relevant (González & López, 2022).

Improvements in Critical Thinking and Deliberation

Another key aspect identified in the research is the improvement in students' **argumentation and deliberation skills**. During the virtual discussions, **85% of the students actively** participated, presenting arguments based on information obtained from digital sources. This result confirms the importance of providing **structured spaces for deliberation** in the classroom, which is in line with the **Theory of Dialogic Learning** (Freire, 1970), according to which debate and critical dialogue favor the construction of a more active and reflective citizen consciousness.

In addition, the analysis of interactions on the digital platform revealed that students **explored different perspectives before casting their vote in the election simulations**, suggesting a more thoughtful and informed decision-making process. This finding is relevant, since one of the main limitations in traditional civic education is the lack of spaces for the practical application of democratic concepts (Pérez & Gómez, 2020).

Challenges and Limitations of Digital Strategy

Despite the positive results, the study also identified some challenges in the implementation of the digital strategy. The **adjusted coefficient of determination (adjusted $R^2 = 0.06387$)** suggests that, although the strategy had an impact on students' participation and critical thinking, there are other factors that also influence their citizen development.

Among the challenges observed are:

- **Digital divide:** Some students struggled to access online resources outside of the classroom, reflecting the need to consider inclusive strategies to ensure equity in access to digital education.
- **Initial resistance to the use of digital tools:** A small group of students showed skepticism towards the use of technologies in the teaching of citizenship skills, which indicates the need for **progressive adaptation processes** to new methodologies.
- **Teacher training in the use of ICTs:** Some teachers expressed the need for additional training in the integration of digital tools in the teaching of citizenship, which highlights the importance of continuous training programs.

Implications for Educational Practice

The results obtained in this study have **important implications for citizenship education and the integration of technology in the classroom**. It is recommended that educational institutions adopt strategies such as:

1. **Use of interactive digital platforms** to encourage student participation in democratic processes.
2. **Design of electoral simulation activities and virtual debates** that allow students to experience decision-making in a safe and controlled environment.
3. **Incorporation of dialogic and collaborative learning strategies**, promoting debate and argumentation as essential tools for citizenship training.
4. **Teacher training in the use of digital technologies**, ensuring that educators have the necessary tools to guide students in learning digital citizenship.

Finally, future research could expand this analysis through **longitudinal studies** that allow evaluating the sustained impact of digital education on the development of citizenship skills. Likewise, it would be pertinent to explore the relationship between the use of digital tools and the construction of citizen identities in secondary education contexts, in order to generate more effective strategies for the formation of critical and participatory citizens in the digital age.

Conclusions

The findings obtained in this study confirm that the integration of digital tools in the teaching of citizenship skills **favors the active participation of students in school democratic processes** and improves their understanding of the exercise of citizenship. The implementation of an **ICT-mediated didactic sequence** allowed students to **experience democracy in a practical way**, increasing their interest in deliberation, the election of student representatives, and collective decision-making.

From a theoretical point of view, these results support the **Theory of Participatory-Based Learning** (Dewey, 1938), which emphasizes the importance of experiential learning in citizenship education. Likewise, the application of digital resources in the teaching of democracy reinforces the **Theory of Digital Citizenship** (Ribble, 2019), by providing students with tools to exercise their rights and duties in digital environments in an ethical and responsible manner.

At the methodological level, the use of surveys, classroom observations, and analysis of digital interactions made it possible to evidence **significant changes in students' attitudes** towards citizen participation. It was observed that, after the intervention, **89% of the students expressed a greater willingness to participate in school democratic processes**, in contrast to **78% who initially did not show interest** in these spaces. In addition, the incorporation of interactive tools such as **Google Sites** facilitated the understanding of civic concepts through dynamic and collaborative experiences, **reducing the perception of citizenship education as theoretical learning and not very relevant to everyday life**.

However, the study also identified challenges in implementing the digital strategy. The **technology access gap** remains a limiting factor in equity in digital learning, suggesting the need to adopt complementary strategies that include face-to-face activities and physical materials to ensure that all students can benefit from the program. Likewise, some teachers expressed the need to receive specific training in the use of ICT for the teaching of citizenship skills, which highlights the importance of teacher training programs in **digital pedagogy and civic education**.

From a practical perspective, this study suggests that educational institutions should:

1. **Promote the use of digital platforms** to encourage student participation in democratic processes inside and outside the classroom.
2. **Design electoral simulation activities, virtual debates and electronic voting**, which allow students to experience democracy in an interactive environment.
3. **Train teachers in digital teaching strategies**, ensuring that they can guide students in building an informed and critical citizenry.
4. **Ensure equitable access to technology**, complementing the use of digital tools with inclusive teaching strategies that benefit all students.

Finally, future research could explore the long-term impact of the use of digital tools on the construction of citizen identities in secondary school students. In addition, it would be relevant to analyse the influence of these learning environments on young **people's ability to actively participate in the digital society and in community decision-making**. This would contribute to the design of more effective educational strategies for the formation of critical, committed citizens prepared to face the challenges of democracy in the twenty-first century.

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