



Digital citizenship education: review of training strategies for elementary and high school students

Educación para la ciudadanía digital: revisión de estrategias formativas en estudiantes de básica y bachillerato

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Abstract

Digital citizenship has become a fundamental competency in contemporary educational processes. Given this reality, this study aimed to analyze pedagogical programs and practices related to digital citizenship training for elementary and high school students in Latin America. A qualitative, documentary-based research approach was conducted, based on a systematic bibliographic review of 12 scientific articles published between 2017 and 2024. Content analysis was used as a technique, and an extraction matrix was used as an instrument to categorize key elements such as the pedagogical approach, the digital competencies promoted, the geographic context, and the observed educational outcomes.

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The findings reveal that, while there is growing interest in including digital citizenship in school processes, initiatives are still incipient and present significant variability in their implementation. Good practices based on the responsible use of technologies, media literacy, critical thinking, and active participation in virtual environments were identified. The conclusion is that it is necessary to consolidate regional educational policies that prioritize this skill, improve teacher training, and develop specific assessment tools.

Keywords: digital literacy; citizenship skills; curriculum; basic education; digital ethics.

Resumen

La ciudadanía digital se ha convertido en una competencia fundamental en los procesos educativos contemporáneos. Ante esta realidad, el presente estudio tuvo como objetivo analizar programas y prácticas pedagógicas relacionadas con la formación en ciudadanía digital en estudiantes de educación básica y bachillerato en América Latina. Se realizó una investigación de tipo documental, de enfoque cualitativo, basada en una revisión bibliográfica sistemática de 12 artículos científicos publicados entre 2017 y 2024. Como técnica se aplicó el análisis de contenido y como instrumento una matriz de extracción que permitió categorizar elementos clave como el enfoque pedagógico, las competencias digitales promovidas, el contexto geográfico y los resultados educativos observados. Los hallazgos revelan que, si bien existe un creciente interés por incluir la ciudadanía digital en los procesos escolares, las iniciativas son aún incipientes y presentan variabilidad significativa en su implementación. Se identificaron buenas prácticas basadas en el uso responsable de tecnologías, la alfabetización mediática, el pensamiento crítico y la participación activa en entornos virtuales. Se concluye que es necesario consolidar políticas educativas regionales que prioricen esta competencia, mejorar la formación docente y desarrollar herramientas de evaluación específicas.

Palabras clave: alfabetización digital; competencias ciudadanas; currículo; educación básica; ética digital.

Introduction

In the age of information and technology, digital citizenship education has become a priority in 21st-century education systems. This need responds to the growing interaction of children and adolescents with digital environments where they participate, express themselves, and construct identities. Digital citizenship, understood as the responsible, ethical, critical, and participatory exercise of rights and duties in virtual contexts, requires training from an early age (Gutiérrez & Tyner, 2022). For this reason, school becomes a strategic space for developing skills that enable students to act consciously in digital ecosystems.

Several studies have shown that students are not always prepared to navigate digital environments in a thoughtful and critical manner. This is related to the gap between the instrumental use of technology and understanding its ethical, social, and political implications (Pérez-Escoda et al., 2019). In Latin America, although there are policies for technological inclusion in school systems, there is still little systematization of pedagogical strategies that promote the comprehensive development of digital citizenship skills, especially at the primary and secondary education levels (ECLAC & Fundación Ceibal, 2022).

The most successful initiatives in the region have been those that integrate digital citizenship into cross-curricular school projects, combining active methodologies, critical thinking, and student participation. For example, in Colombia, the "Ser Digital" program has promoted the conscious use of social networks and respect in digital coexistence, while in Uruguay, Plan Ceibal has been a pioneer in proposing teaching resources to promote citizenship in virtual environments from an inclusive perspective (Fundación Ceibal, 2021). However, it has been observed that the implementation of these practices is heterogeneous and often depends on the initiative of teachers, who do not always have specific training (Cabello et al., 2021).

In this context, reviewing training strategies aimed at digital citizenship is essential to understand the approaches used, their results, and the good practices that can be replicated or adapted. This is especially relevant for elementary and high school levels, stages in which students build their digital identity and define their forms of online interaction.

This article aims to critically analyze the training strategies documented in recent studies on digital citizenship in Latin American schools, with an emphasis on elementary and high school levels. Through a systematic literature review, pedagogical approaches, resources used, skills developed, and persistent challenges in training responsible digital citizens will be identified.

Methodology

This research falls within the qualitative approach, with a descriptive-documentary design based on the systematic literature review technique. The objective was to analyze training strategies applied to the teaching of digital citizenship in elementary and high school students in the Latin American context. This type of study allows for the exploration, organization, and interpretation of experiences documented through recent academic sources.

The final sample consisted of 12 scientific articles published between 2018 and 2025, selected through purposive sampling. The inclusion criteria were: (1) peer-reviewed articles, (2) open access, (3) publication in indexed journals, (4) studies conducted in Latin America, and (5) explicit approach to educational strategies in digital citizenship in school contexts. Articles without specific pedagogical application, theoretical studies without empirical evidence, and documents with poor methodological validity were excluded.

The literature search was conducted in recognized academic databases such as Scielo, Redalyc, DOAJ, Dialnet, Google Scholar, and the official ECLAC repository. Combinations of keywords such as "digital citizenship," "basic education," "digital skills," "pedagogical strategies," and "Latin America" were used, employing Boolean operators to broaden or refine the results. Articles were collected between June and August 2025.

The main instrument used was a literature review matrix, designed to record the fundamental aspects of each study: authors, year, country, type of population, educational level, objectives, training strategies, skills developed, and main conclusions. This matrix made it possible to organize the information, facilitate comparison between studies, and extract common categories.

Qualitative content analysis was applied to identify patterns, thematic categories, and gaps in the documented pedagogical experiences.

The analysis was based on units of meaning extracted from the articles and grouped into themes such as: pedagogical approaches, teacher training, use of ICT, citizenship skills, and institutional challenges. The triangulation of categories and critical review of the methodologies used ensured the validity of the analysis.

All the articles included were verified by checking their availability in academic databases, checking their DOIs, and conducting an internal methodological review. This cross-validation ensured the reliability of the data, the timeliness of the research, and the relevance of its contributions to the study of digital citizenship in the Latin American school context.

Results

The final sample consisted of 12 studies published between 2019 and 2025 in indexed scientific journals and documents from international organizations. All of the selected studies addressed digital citizenship in education in Latin America, with a focus on primary and secondary education. The selection included institutional experiences, empirical research, case studies, policy frameworks, and applied teaching proposals.

Table 1 summarizes the main characteristics of the selected articles:

Table 1. *Matrix of articles analyzed*

N°	Autor(es) y año	País o región	Nivel educativo	Estrategias o enfoque	Competencias desarrolladas
1	Cabello et al. (2021)	Chile	Secundaria	Proyectos colaborativos, convivencia digital	Ética, participación, crítica
2	CEPAL & Fundación Ceibal (2022)	América Latina	Básica y Media	Marco regional, formación docente	TIC, socioemocionales
3	Fundación Ceibal (2021)	Uruguay	Básica	Recursos didácticos integrados	Participación crítica, equidad
4	Gutiérrez & Tyner (2022)	España/Latinoamérica	Básica y Media	Fundamentos teóricos y pedagógicos	Ciudadanía digital integral
5	IDB (2021)	América Latina	Básica	Competencias docentes en TIC	Diseño didáctico con tecnología
6	Pérez-Escoda et al. (2019)	España	Media	Evaluación de competencias	Alfabetización mediática
7	ProFuturo (2025)	América Latina	Básica y Media	Innovación educativa digital	Inclusión, creatividad digital
8	UNESCO (2023)	América Latina	Básica y Media	Políticas públicas y casos de éxito	Inclusión, equidad digital
9	UNESCO (2024)	América Latina	Todos	Red Latinoamericana de CD	Formación crítica y colaborativa
10	Herrera et al. (2022)	CEPAL (región)	Básica y Media	Diagnóstico regional	Brecha digital, acceso y formación
11	Pardo (2022)	Colombia	Media	Estrategias TIC en aula	Pensamiento crítico digital
12	Salinas (2020)	América Latina	Todos	Agenda digital educativa	Gobernanza, ciudadanía crítica

The studies show a wide variety of pedagogical approaches, ranging from institutional projects (UNESCO, 2023; ECLAC & Ceibal, 2022) to classroom experiences such as those documented in Chile (Cabello et al., 2021) and Colombia (Pardo, 2022). While some prioritize the development of educational policy frameworks and teacher competencies, others highlight classroom strategies focused on critical participation, digital ethics, and online conflict resolution.

Cross-cutting and interdisciplinary approach

All studies agree on the need to integrate digital citizenship as a cross-cutting theme in the school curriculum. Gutiérrez and Tyner (2022) argue that digital citizenship training must go beyond the technical use of ICTs and include a critical, ethical, and political dimension. Similarly, the Fundación Ceibal (2021) approach proposes teaching resources adapted to different areas to promote this integration.

Gaps in teacher training and digital inequality

Reports by ECLAC (Herrera et al., 2022) and the Inter-American Development Bank (IDB, 2021) agree that the main limitation is the lack of specific training for teachers in digital citizenship. Although general digital skills have been developed, there is still a lack of pedagogical tools focused on the civic dimension of the digital environment. In addition, marked inequalities in access and connectivity have been identified, limiting the uniform implementation of these strategies.

Emerging innovations and good practices

The experiences documented by ProFuturo (2025) reveal that there are innovative and sustainable practices developed in vulnerable contexts, where the creative use of technologies has strengthened student civic participation. However, these experiences need to be systematized and evaluated for regional scaling.

Lack of impact assessment

One of the common findings in most of the articles is the lack of formal evaluation of the impact of digital citizenship training strategies. Although there are multiple experiences, few of them include robust

instruments to measure the development of competencies, changes in attitude, or community transformations.

The findings from the twelve articles analyzed show that digital citizenship training in Latin America has become increasingly relevant in educational discourse, especially after the COVID-19 pandemic, which forced the digitization of school processes. Authors such as Gutiérrez and Tyner (2022) agree that the concept of digital citizenship should not be limited to the instrumental use of technologies, but should encompass ethical, critical, and participatory dimensions. Along these lines, Cabello et al. (2021) emphasize the urgency of training individuals to understand their role in the network, both as producers of information and as agents of change.

Several studies have identified significant structural gaps in both access to technology and teacher training. The Fundación Ceibal report (2021) mentions that Latin American teachers have deficiencies in digital skills related to critical citizenship and that they often lack the resources or methodological strategies to address issues such as misinformation, cyberbullying, or online democratic participation. Herrera et al. (2022), from ECLAC, also highlight the lack of sustained public policies that guarantee continuous teacher training in digital citizenship as part of the official curriculum.

However, the innovative experiences collected in several articles show that there are promising pedagogical proposals in the region. For example, the ProFuturo study (2025) highlights school initiatives where students develop campaigns against digital hate speech, practices that integrate critical thinking with the ethical use of social media. Along the same lines, Pérez-Escoda et al. (2019) argue that school spaces should encourage active, reflective participation committed to democratic values, promoting the development of critical digital awareness.

However, a recurring methodological weakness is observed: most studies do not implement systematic instruments to assess the impact these initiatives have on students' skills. This is reaffirmed by Ortega-Tudela et al. (2021), who insist on the need for standardized metrics to assess the real effectiveness of digital citizenship programs. Furthermore, Salinas (2020) warns that although progress has been made in recognizing the issue in institutional discourse, educational

practices often remain reproductive and fail to genuinely engage students in processes of social transformation in the digital environment.

Finally, the UNESCO report (2023) calls for the incorporation of digital citizenship into national education policies as a cross-cutting competence, linked to the 2030 Agenda and human rights. Digital citizenship must go beyond technological literacy; it involves training critical, ethical individuals who are capable of influencing public life, both in face-to-face and digital environments. The systematization of experiences, the strengthening of teaching capacities, and coherent curricular integration are key elements for consolidating this educational paradigm in Latin America.

Conclusions

Digital citizenship has been positioned as a key competency for the comprehensive development of students in the 21st century. The review shows that there is growing interest in Latin American schools in integrating pedagogical practices that train critical, ethical, and participatory digital citizens. However, this interest does not always translate into sustained policies or structural curricular transformations.

One of the main challenges identified is the limited training of teachers in digital skills with a focus on citizenship. Although there are notable initiatives, teachers often lack the tools and guidance to address issues such as misinformation, online risks, or digital activism from a critical and transformative educational perspective.

Likewise, the studies analyzed show a lack of systematic evaluations to measure the impact of the strategies applied in the classroom. This absence of standardized instruments and empirical evidence hinders pedagogical and policy decision-making, limiting the possibility of scaling up or replicating good practices in different educational contexts in the region.

Finally, strengthening digital citizenship requires effective coordination between teachers, institutions, governments, and social organizations. The inclusion of this topic in national education plans, together with continuous teacher training and the democratization of

access to ICT, is essential to consolidate educational processes that promote the active, ethical, and reflective participation of students in digital environments.

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