Educational Quest: An Int. J. of Education and Applied Social Sciences: Vol. 16, No. 03, pp. 349-358, December 2025
DOI: 10.30954/2230-7311.3.2025.14
Peer Reviewed Journal

Perception of Inservice Teachers of Private and Government School Towards Digital Citizenship

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Received: 20-09-2025 **Revised:** 21-11-2025 **Accepted:** 01-12-2025

ABSTRACT

Socrates, a prominent philosopher from ancient Greece, asserted "I am a citizen, not of Athens or Greece, but of the world" (Peter, 1977 as cited in Suppo, 2013). His utterances suggested a level of citizenship that transcended beyond his ties to his home country. A similar result has been seen in our lives with the introduction of the Internet into our lives, as it caused a significant shift in our habits. The alterations are the most pronounced in the areas of communication and life perception. As a result of this occurrence, researchers began focusing more closely on the idea of digital citizenship (Roblox Corporation, n.d.). The notion of digital citizenship is critical for encouraging students to exhibit responsible and ethical behaviour while using technology. Education instils values, rights and responsibilities of a good citizen. As a 21st century learner it becomes essential to teach students about citizenship that is global in nature and has no boundaries. A mixed method approach combining a Likert scale and interview schedule was used to collect responses from in-service elementary teachers working in both government and private schools. The study found that most teachers maintained a neutral outlook towards digital citizenship, indicating awareness but limited application. However, government school teachers exhibited a comparatively stronger connection with the ethical and civic aspects of digital citizenship. In contrast, teachers from private schools, while demonstrating greater familiarity with digital tools, engaged less with the broader values tied to digital responsibility. A significant proportion of participants (76%) viewed digital skills as essential for responsible online behaviour. Differences emerged in how digital empathy and cybersecurity were perceived across the two types of schools. Many teachers stressed the importance of embedding digital citizenship across all subjects rather than treating it as an isolated topic. They also highlighted the need for ongoing professional development and the active involvement of parents in shaping students' digital behaviour. The study points to the necessity for a well-rounded and inclusive approach to digital citizenship education—one that empowers both teachers and learners to navigate the digital space with awareness, integrity, and accountability.

Keywords: Digital Citizenship Education (DCE), Digital Citizenship

The evolution of digitisation in society has led to a host of opportunities in the fields of social interaction and employment making it essential for education as well. The advantages of digitisation are expected to be offered in a typical society but it is essential that the citizens follow certain behavioural guidelines. There need to be laws regulating the behaviour, the breach of which must result in consequences. Use of digital technology for learning, playing and working is common, a large proportion of its users are not aware of their responsibilities as a member of the digital society. It is imperative that we understand the rapidly changing technology and its impact on our present and future. While it is important to delve into technology to expand its scope, it is important to respect its limits and recognise

How to cite this article: Kaur, S. (2025). Perception of Inservice Teachers of Private and Government School Towards Digital Citizenship. *Educational Quest: An Int. J. Edu. Appl. Soc. Sci.*, **16**(03): 349-358.

Source of Support: None; **Conflict of Interest:** None

its impact not just on our lives but also those of others. We must evaluate our use of technology to check if we have used it in the most effective way possible. If a mistake has been made, a lesson must be learnt and it must never be repeated. Errors are acceptable in a controlled environment, such as one where the students are learning, but these also need to be minimised and slowly eliminated through modelling and direction. For this to be achieved, it is important to teach technology along with an equal focus on its appropriate usage.

Review of Literature

Digital citizenship addresses "the norms of acceptable behaviour with regard to technology use" (ISTE, 2011, p.2) The importance of nurturing digital citizenship among students has been stressed upon by educators. In terms of education, its objectives include nurturing the students to exhibit the right behaviour around the usage of computers and digital communication tools. At the same time, it teaches prevention of unacceptable online practices or behaviours such as identity theft,cyberbullying,footprints,ethics, harmful contact and harassment. By doing so, digital citizenship strengthens the constructive facets of technology to allow everyone to work and play in the digital environment.

Digital citizenship is a critical aspect of the role of school teachers in today's digital world. Teachers who are digitally literate and proficient in using technology in the classroom can help students develop the skills they need to be safe, responsible, and successful in a digital world.

A study by Keser, & Soykan (2018) analysed that as pre-service teachers usage of digital tools increased so did their digital citizenship levels. For future students to understand digital citizenship,it becomes quite essential for pre-service teachers to model themselves as a responsible digital citizen (Guven, 2014).

Hollandsworth *et al*. (2017) also suggested that digital citizenship needs to be inculcated in children at an earlier age (before they attain adulthood) to foster good online conduct. There are several aspects that must be covered to ensure students make responsible use of digital resources.

Westheimer & Kahne, (2004) defines a good digital citizen as someone who is conscious of his/her duties towards digital community, that is, he/she is consistent in demonstrating online behaviour that combines normal etiquette while being responsible, safe and protecting oneself. A digital citizen with these attributes is probably going to show greater critical and digital literacy as well as civic responsibility when using digital technology, A study by Karal & Bakir (2016) showed that preservice teachers perceive e-government applications as digital citizenship.

Cyberbullying has been considered as a serious problem by scholars, particularly for secondary school children in the age group 12-14 years (Sittichai, 2013; Tokunaga, 2010). Jones & Mitchell (2016) recommend that digital citizenship be considered separate from digital literacy. The focus of digital citizenship must be on respectful and tolerant behaviour towards others on the internet and increased civic engagement activities. Ribble &Miller (2013) state that K-12 education needs to incorporate lessons on appropriate usage of online communication with special focus on avoidance of cyberbullying or threatening Jones & Mitchell, (2016) mentioned that digital citizenship is that part of digital awareness that carries out courteous online conduct and civic engagement. It helps in reducing cyberbullying and in increasing upstander behaviour.

In line with this, the online giants like Facebook, Twitter and Google, in partnership with certain external organisations, have initiated promotion of digital citizenship on their platforms. Google has developed a digital literacy and citizenship programme in partnership with iKeepSafe.org, a US based NGO. This programme consists of lesson plans and educational materials on subjects relating to critical literacy, managing digital reputation and cybersafety. The Digital Citizenship Research Grants programme launched by Facebook in 2011 supports research projects that highlight digital citizenship trends. Its initial focus was on prevention of bullying, the use of social media to encourage constructive online behaviour and learning opportunities on effective, efficient and safe usage of ICT.

More measurable hard skills are insufficient for being an effective digital citizen. One must also possess soft skills that cannot be easily quantified. These are covered by UNESCO's global citizenship education which aims to inculcate concepts such as "sense of belonging to a common humanity", "sharing values and responsibilities" and "attitudes of empathy, solidarity and respect for differences and diversity" (UNESCO 2015).

The selection of the five core dimensions—Digital Ethics, Digital Minimalism, Digital Security, Digital Engagement, and Digital Skills—was informed by an integrative review of leading digital citizenship frameworks and contemporary educational needs. These dimensions were primarily drawn from Ribble's Nine Elements of Digital Citizenship, which are widely endorsed in educational literature and by organizations like the International Society for Technology in Education (ISTE, 2011). Ribble's model categorizes digital citizenship into components such as digital communication, literacy, etiquette, rights, and security, forming a foundational basis for assessing online behaviour in educational settings. From this framework, Digital Ethics, Digital Security, and Digital Skills were directly adapted due to their clear relevance to classroom practices and policy compliance.

The inclusion of Digital Engagement reflects the pedagogical shift towards interactive, participatory learning environments where students are not merely consumers but active contributors in the digital space. This aligns with UNESCO's (2015) emphasis on civic participation and digital responsibility. Digital Minimalism, a relatively modern construct, was included in response to increasing concerns around screen time, digital well-being, and information overload. This dimension draws from Newport's (2019) philosophy, which advocates for intentional and focused use of technology—an aspect particularly relevant in post-pandemic educational settings.

Together, these five dimensions offer a balanced perspective on digital citizenship that addresses not only technical proficiency but also ethical discernment, safety practices, mental well-being, and civic engagement. This comprehensive categorization ensures the study is both theoretically grounded and responsive to emerging educational and societal challenges in digital behaviour.

Being a digital citizen, one must know how to effectively use the internet and media while being conscious of their rights and responsibilities They must also have the skills to remain safe and still empathise with others at a social level.

The conceptual framework underpinning this study on digital citizenship among in-service teachers is built on five key dimensions—Digital Ethics, Digital Security, Digital Skills, Digital Engagement, and Digital Minimalism—each supported by recent, peer-reviewed academic research.

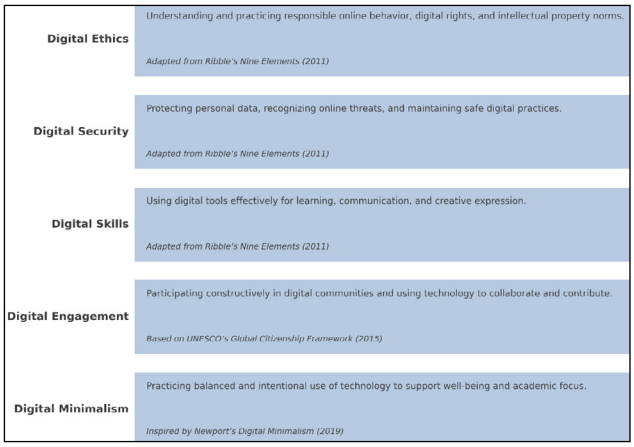

Fig. 1: Core dimensions of digital citizenship in school education with sources

Digital Ethics is extensively discussed in literature as a foundational component of responsible online behaviour. Aliasan *et al.* (2024) emphasize the need for institutions to implement structured ethical policies and cultivate a culture of responsibility through education. White and Stevens (2024) expand this view by examining ethical dilemmas related to AI and data privacy in educational contexts, urging robust legislation and inclusive dialogue. Complementing this, Frischherz and Millar (2024) propose pedagogical models that equip educators with decision-making frameworks to handle digital ethical issues in real time. Moving to *Digital Security*, studies by Latorre-Medina (2023) and Herawati *et al.* (2024) stress the critical need for cybersecurity awareness in teacher training, highlighting gaps in institutional infrastructure and advocating for proactive digital safety education. Magalhães *et al.* (2024) further argue that public policies should prioritize continuous digital security monitoring, especially in under-resourced schools. The dimension of *Digital Skills* finds solid backing from Yadav (2023, 2024), who

identifies ICT competency as essential for effective pedagogy in modern classrooms, suggesting its integration in public education policy. Zhang and Policarpio (2025) reinforce this by analyzing vocational educators' proficiency in technology, noting the correlation between skill development and improved learning outcomes. Regarding *Digital Engagement*, Balasooriya *et al.* (2018) and Nawarathna (2023) discuss the psychological and pedagogical mechanisms for student involvement, calling for the strategic use of digital tools to enhance emotional, cognitive, and behavioural engagement. Girdzijauskienė *et al.* (2022) add that personalized learning technologies can deepen student motivation and autonomy. Finally, *Digital Minimalism* is increasingly viewed as a necessary counterbalance to digital overload. Bharaty and Das (2023) propose mindful technology usage to reduce stress and promote academic productivity. Sarnou (2021) highlights the lack of awareness around digital consumption among students, while Kumar and Nath (2024) provide evidence that digital restraint can enhance both well-being and focus. Collectively, these studies establish a robust academic foundation for examining digital citizenship through a multifaceted, interdisciplinary lens.

India's educational environment is undergoing a significant transformation driven by technology, making the five dimensions of digital citizenship—Digital Ethics, Digital Security, Digital Skills, Digital Engagement, and Digital Minimalism—highly pertinent. Digital ethics has gained prominence as issues like plagiarism, cyberbullying, and inappropriate online behaviour become more common among students, largely due to limited digital literacy and lack of ethical guidance in schools (Sharma & Yadav, 2023). With educational institutions increasingly targeted by cyber threats, there is a growing need for comprehensive digital safety measures and training programs, such as the Telangana Cyber Congress, to build awareness and resilience among students (Rao *et al.* 2024). Digital skills are a priority under the National Education Policy (NEP) 2020, which emphasizes the need for integrating technology into teaching practices. Nonetheless, a significant portion of the teaching workforce still lacks confidence in using digital tools effectively, highlighting the need for ongoing professional development (Singh & Mehta, 2023). Digital engagement remains a challenge, particularly in underprivileged schools where unequal access to resources affects student participation and learning outcomes. Research has noted distinct differences in engagement levels between private and government school settings (Kaur & Joseph, 2024). Digital minimalism is emerging as a strategy to counteract the adverse effects of prolonged screen exposure, such as mental fatigue and reduced academic efficiency. Promoting disciplined and intentional use of technology is considered essential for maintaining students' focus and well-being (Bharaty & Das, 2023). Together, these dimensions present a culturally and contextually appropriate framework for fostering informed, responsible digital behaviour among Indian educators and learners.

India has adopted a multifaceted approach to foster digital citizenship among school students, integrating national policies, institutional programs, state-level innovations, and public-private partnerships. The National Education Policy (NEP) 2020 emphasizes the importance of digital literacy and ethical internet use from early education stages. Aligned with this vision, the Ministry of Education launched PM eVIDYA to consolidate various digital learning platforms, ensuring equitable access to education across the nation.

The Central Board of Secondary Education (CBSE) has introduced a comprehensive three-level Digital Citizenship curriculum for classes VI–VIII, focusing on digital etiquette, cybersecurity, cyberbullying, information literacy, and emerging technologies like AI and AR/VR. This curriculum employs experiential and activity-based learning methodologies to engage students effectively. Additionally, CBSE's Project CARTE BLANCHE has selected 840 schools across 766 districts to implement hybrid learning models, digital literacy programs, and skill development initiatives. CBSE schools are also integrating digital literacy across various subjects, promoting safe online environments, ethical online interactions, and facilitating parental involvement to reinforce digital citizenship principles at home.

The National Council of Educational Research and Training (NCERT), through its Central Institute of Educational Technology (CIET), has implemented initiatives like "Cyber Jaagrookta Diwas," observed monthly to educate stakeholders on cyber safety

and digital ethics. In collaboration with Google India, NCERT has incorporated "Digital Citizenship and Safety" lessons into the ICT curriculum for grades 1 to 12. Platforms like e-Pathshala and the National Repository of Open Educational Resources (NROER) provide inclusive digital content to support these objectives.

State governments have also taken proactive roles. Kerala's KITE initiative equips students with digital tools and cyber safety skills through student clubs like Little KITEs. Telangana's Cyber Congress empowers students as peer educators to combat cybercrime. In the non-governmental sector, the CyberPeace Foundation's eRaksha Competition, held in partnership with NCERT and UNESCO, encourages digital responsibility among youth. The 1M1B Foundation's "Digital Nagrik" campaign, backed by Meta, has trained over a million students in digital ethics and safety. These concerted efforts reflect a coordinated national endeavour to build a digitally literate and ethically grounded generation.

Research Questions

- **Q1.** What is the perception of Inservice teachers towards digital citizenship?
- **Q2**. Is there a significant difference between Inservice teachers of government and private schools towards digital citizenship?

Methodology

This study employed a mixed-method research design to gain a comprehensive understanding of teachers' perceptions of digital citizenship. The quantitative component involved a 5-point Likert scale survey with 37 items categorized under five dimensions: Digital Ethics, Digital Minimalism, Digital Security, Digital Engagement, and Digital Skills.

The qualitative aspect comprised semi-structured interviews. Sampling was conducted using a Purposive sampling technique from elementary school teachers in five government schools and five private schools across West Delhi to ensure diverse representation.

A total of 60 teachers volunteered to complete the online survey distributed via Google Forms, and 19 teachers participated in interviews. Experts were consulted during the tool construction to ensure content validity. Interview questions were designed to reflect the same five dimensions as the Likert scale.

For statistical analysis, an independent samples t-test was performed to determine whether significant differences existed in the digital citizenship perceptions between government and private school teachers.

For qualitative data, thematic coding was employed to identify recurring patterns and themes across interview transcripts, enabling a nuanced interpretation of teacher perspectives.

Data Analysis

Table 1: Digital Citizenship Scale Level

Digital citizenship scale levels	Score interval
Very Weak level	41-70
Weak level	71-90
Medium level	91-110
Good level	111-130
Very good level	131-150
Perfect level	151-170

Table 2: Digital Citizenship Scale Level with percentage and frequency

	Government	Private	Gov. (f)	Private (f)
Good level	6.7	13.3	4	8
Perfect level	11.7	15	7	9
Very good level	31.7	20	19	12

In order to decide Inservice teachers level towards digital citizenship, the above criteria were set on the basis of scores received. The score level ranged between 41 to 170 depicting weak to perfect level.

Among government school teachers, 31.7% demonstrated a very good level of digital citizenship, while 11.7% reached the perfect level. In contrast, 15% of private school teachers achieved the perfect level, and 20% were at a very good level. Although a higher proportion of private school teachers attained the perfect level, government school teachers had a stronger overall presence at higher competency levels, indicating a more consistent attainment of digital citizenship across the group.

The analysis of digital citizenship scores reveals a notable difference in the average responses

Table 3

Dimensions	Govt School	Private School
Digital Ethics		
I teach my students about ethics of sharing information (creative commons, Intellectual property rights, copyrights)	155	93
I sometimes apprise students about plagiarism and its consequences.	79	44
I always respect individuals expressing their opinions on the internet.	144	93
I sometimes download material illegally on the internet.	150	84
Information on the internet is authentic.	128	74
I feel happy when my students participate in educational communities like Massive Open Online Courses	159	96
I believe teaching students how to browse internet is a waste of time.	139	91
I report to the authorities whenever I feel my digital rights are being violated.	125	95
Digital Minimalism		
I believe internet cannot be excluded from teaching and learning	133	100
I believe screen time while studying is not a cause of concern.	136	82
I make sure to adjust screen and keyboard positions for my students to reduce neck and eye strain	153	95
I do not set time limits on the use of digital devices	136	80
I advise students to take regular breaks from social media and other online activities	151	101
I feel activities that do not involve technology are monotonous	126	77
I make sure my students are mindful of online behaviour and communication	151	100
Digital Security		
I advise using anti-virus and anti-malware software to my students.	153	98
I am hardly aware of phishing scams and other digital threats.	107	81
I discourage students about sharing personal information online, such as full name, address, phone number, etc in cyber space.	142	95
I advise my students to keep same password for all website	155	88
I encourage students about using a VPN (Virtual Private Network) when connecting to public Wi-Fi.	126	77
I suggest students to not secure their personal devices with a passcode or fingerprint authentication.	77	50
I advise my students to encrypt sensitive files and communications when necessary	136	87
Digital Engagement		
Games and challenges help in understanding digital citizenship in a more engaging and interactive manner.	131	91
I believe students who over post on social media tend to create good digital identity on the web.	132	71
I discourage students to engage in activities such as trolling.	133	92
I recommend students to share their debit/credit card credentials while making a purchase through any e-commerce platforms.	160	86
Digital engagement helps students develop the skills and knowledge they need to succeed in the digital age	148	94
Interacting with strangers in cyber space help students to gain knowledge about politics and society.	141	86
I encourage students to use abbreviation whether offline or online	113	76
I advise students to not share any information without deep investigation on the web.	153	95
Digital Skills		
I am aware of various shortcut keys while using laptop or computer.	141	95
I do not keep a check on the data used while I am browsing or downloading on the web.	120	72
I hold good knowledge of various technologies and its use in teaching and learning.	129	89
I do not use key terms when looking for information on the web	132	80
I prepare power point presentations without much support from IT team or others.	136	98
I pay less attention to privacy documents before installing any application.	137	85
I make sure to update my passwords once in two months.	131	77

between government and private school teachers. Government school teachers reported a mean score of 135.73, considerably higher than the 85.73 mean score of private school teachers. This suggests that, overall, teachers in government institutions demonstrated stronger alignment with digital citizenship principles. Additionally, the variance in scores—419.31 for government teachers and 179.58 for private teachers—indicates a broader range of responses among government educators. This wider spread may reflect varying levels of exposure, training, or access to digital resources within government schools. In contrast, the relatively lower variance among private teachers implies more consistency in their responses, albeit at a lower average level. These patterns highlight differences not only in the overall digital citizenship awareness but also in the distribution of experience and familiarity with digital tools and practices across the two school types.

Table 4: T-Score of government and private school teachers

	Government	Private
Mean	135.73	85.73
Variance	419.31	179.58
Observations	30	30
Pooled Variance	—	299.44
Hypothesized Mean Difference	11.19072	
df	0	
t Stat	2.001717	
P(T<=t) one-tail	135.73	85.73
t Critical one-tail	419.31	179.58
P(T<=t) two-tail	30	30
t Critical two-tail		299.44

Table 5: Positive and Neutral attitude towards digital citizenship

	Government	Private	Grand Total
Neutral	18	23	41
Positive	12	7	19
Grand Total	**30**	**30**	60

The findings indicate that a large proportion of both government and private school teachers hold a neutral stance on digital citizenship. Among them, 60% of government school teachers (18 out of 30) and 76.7% of private school teachers (23 out of 30) were classified under this category. This neutrality may reflect a general awareness of digital citizenship concepts, but also a lack of active implementation or confidence in promoting these principles in their teaching practices. This could stem from insufficient training, unclear curricular expectations, or limited institutional support.

In contrast, 40% of government teachers (12 individuals) and 23.3% of private teachers (7 individuals) expressed a positive attitude. The higher proportion of positivity among government teachers may be attributed to recent public education initiatives that emphasize responsible digital behaviour and online ethics. Despite often having fewer technological resources, government schools may be placing greater focus on the civic and ethical aspects of digital education.

These results point to the importance of encouraging a shift from neutrality to a more proactive and engaged stance. Providing structured professional development, integrating digital citizenship into training modules, and fostering supportive school environments can help teachers better understand their role in guiding students toward responsible digital participation. Based on the Likert scale data provided, the dimension with the highest overall score is Digital Ethics, with a total score of 1212.

Ranking Summary

1. Digital Ethics – 1212
2. Digital Minimalism – 1113
3. Digital Engagement – 1105
4. Digital Security – 1032
5. Digital Skills – 1020

Dimension	Government School Score	Private School Score	Higher Scorer
Digital Ethics	853	510	Government School
Digital Minimalism	415	254	Government School
Digital Security	260	179	Government School
Digital Engagement	406	249	Government School
Digital Skills	272	172	Government School

This indicates that teachers demonstrated the strongest understanding or alignment with ethical aspects of digital citizenship, such as responsible online behaviour, respect for privacy, and digital integrity.

Interviews conducted with 19 in-service teachers—comprising 8 from government schools and 11 from private schools—revealed several important patterns in their understanding and approach to digital citizenship.

When asked about how digital citizenship should be introduced in schools, 7 teachers felt it should be treated as a distinct subject, while 12 preferred that it be interwoven with all subjects. This suggests a stronger inclination towards a cross-disciplinary model of digital education, where the values and practices of digital citizenship are embedded into everyday teaching. In exploring how teachers address digital ethics, 6 participants mentioned that they often do not have adequate time due to curriculum pressures, and 13 believed that such topics are better handled by computer instructors. This points to a limited perception of shared responsibility among staff for teaching ethical digital behaviourist respect to digital skills, 14 teachers acknowledged these as fundamental to being a responsible digital citizen. They associated skills such as navigating online platforms, creating digital content, and ensuring safe browsing with informed and ethical participation in digital spaces. However, a few teachers maintained that digital skills and ethical engagement are separate concerns. When the topic of digital empathy was raised, it became evident that more private school teachers (8 out of 11) considered it a critical aspect of online interactions, in contrast to only 1 out of 8 government school teachers. This difference may reflect varied exposure to digital citizenship training or differing institutional priorities. In the area of digital security, 16 out of 19 teachers stated they were unfamiliar with the concept of VPNs. Among private school teachers, 5 reported following encryption practices based on school guidelines. Conversely, although 6 government school teachers were aware of encryption, they admitted to rarely using it. This points to a noticeable gap between awareness and actual implementation of digital safety practices.

Overall, the findings illustrate that while teachers are increasingly aware of the relevance of digital citizenship, its consistent application across schools remains a challenge. Role ambiguity, lack of time, and unequal training opportunities highlight the need for more integrated and supported approaches to digital citizenship in the school system.

CONCLUSION

The study highlights that both government and private school teachers acknowledge the significance of digital citizenship in the current educational context. While a generally positive outlook was observed across both groups, differences emerged in terms of understanding and implementation. Government school teachers displayed greater emphasis on ethical aspects and responsible digital behaviour, whereas private school teachers, often supported by more consistent institutional training, showed stronger familiarity with digital tools and practices.

Digital Citizenship Education has become vital in shaping students' ability to interact safely, ethically, and effectively in an increasingly digital world. It encompasses far more than technical literacy—extending to online conduct, cyber hygiene, empathy, and the understanding of rights and responsibilities in virtual environments. Insights from teacher interviews revealed a shared recognition of the value of digital skills as foundational to becoming responsible digital citizens. However, the integration of such principles in daily teaching was found to be limited, mainly due to packed curricula and unclear role allocation among staff.

The study also revealed that concepts like digital empathy, health, and security are not uniformly addressed, pointing to the need for continuous training and systemic support. Teachers expressed the need for workshops, seminars, and collaborative strategies with parents to support students' development in this area. Importantly, the findings suggest that digital citizenship should not be siloed into a separate subject but integrated across all disciplines, making every educator a stakeholder in this process.

As digital engagement becomes central to both learning and living, the focus must shift from access to ability—ensuring that every student, regardless of

their background, is equipped with the knowledge and values required to navigate the digital world responsibly and with confidence.

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