

DIGITAL LITERACY AND ETHICAL AWARENESS IN CONTEMPORARY EDUCATION: CHALLENGES AND PRACTICAL APPROACHES

Varvara Nikolaidou

Faculty of Education Trakia University, Stara Zagora, Bulgaria, nikolvera@yahoo.gr

Abstract: This article dives into why digital literacy and ethical smarts matter so much in schools these days, zeroing in on the tough spots where teachers and kids struggle to use tech in a smart, responsible way. As gadgets and apps flood into classrooms, everyone involved really needs to figure out not just how to operate them, but how to do it without crossing lines. We pulled together insights from past research and hands-on stories from primary and secondary schools around Europe. Data came from talking one-on-one with teachers and running surveys with students, all to get a sense of what's happening day-to-day stuff like basic techabilities, spotting privacy risks, acting decently online, and not ripping off someone else's work. The results shows skills in this area swing wildly depending on the school, and structured lessons on the ethical side are often missing in action. That said, schools that actually run targeted digital programs saw kids jumping in more eagerly, handling tools with real care, and getting better at questioning what they see. Teachers who got some solid training on digital ethics. They were way more comfortable weaving tech into their teaching and got their students thinking about accountability and treating others right. Wrapping it up, the piece makes a strong case for blending digital skills and ethics right into the heart of school plans, helping shape students who keep learning thoughtfully for life. Ideas they throw out include setting up core digital courses everyone takes, keeping teachers sharp with ongoing sessions, group work that hammers home good online habits, and policies that level the playing field for tech access. It's all supported by side-by-side looks at different teaching styles, numbers on how digitally savvy students are, and straight talk from educators themselves. In the bigger picture, this adds weight to the push for ethics to lead the charge in digital education, arming young people to navigate the online world with skill and integrity. Furthermore, digital literacy and ethical awareness cannot be treated as optional extras or separate topics in the daily routine of the classroom and school. Students' education must evolve so that they have the ability to weigh what they read online, imagine where their posts or comments might end up, and keep their digital conversations ethical and civil. These kinds of skills not only strengthen individual judgment, but also the whole group. Teachers, of course, are the ones who guide students as mentors, role models, and moral guides, so keeping their skills and strategies at a high level is non-negotiable. Schools need clear policies, real programs, and equal conditions so that every child has the equipment, guidance, and opportunity to collaborate with their classmates. When the structure combines practical technology training with honest reflection, students leave with a more stable and thoughtful understanding of the digital world (Vuorikari et al., 2022). In the long term, this integrated approach provides young people with the tools to navigate an increasingly complex online landscape with real responsibility, accountability, and ongoing awareness.(Selwyn, 2020).

Keywords: digital literacy, ethical awareness, contemporary education, responsible technology use, teacher training, student engagement

1. INTRODUCTION

Today, technology has penetrated schools and all levels of education. The application of information technology now extends beyond simply having the skills to operate a computer or smartphone. It is, therefore, important for the teaching community, as well as students, to be able to navigate the ethics surrounding the application of the technology involved. (Kurt & Köseoğlu, 2024) Issues like privacy, responsible online communication, and respecting intellectual property are no longer optional they are essential skills for navigating modern learning environments. Even schools and universities increasingly adopt online platforms, but many students struggle to use them responsibly. They may share personal information too freely, encounter misinformation, or fail to respect copyright rules. Teachers, for their part, often feel that they lack the resources and are unprepared to guide students through the challenges posed by new digital technology. This is because their training in digital technology, and especially in digital ethics, is limited. (Livingstone & Sefton-Green, 2016). Purely technical skills are not sufficient on their own. The application of technology in an ethical way is also necessary. When both are taught, the students can critically evaluate information, work with others in a secure manner, and also make well-thought-out decisions. The study will focus on these concerns in depth. Analysing the data from European schools and universities from 2020 to 2025, the study will attempt to:

- Understand and Practice of Digital Literacy and Ethics. In the current educational environment, the mere application of technology is woefully inadequate in enabling well-developed digital literacy. Most children today are

well-versed in the use of technology, but their perceptions of appropriate ethical behavior on the internet, protecting their own or others' private information, or intellectual property, are questionable (Livingstone & Sefton-Green, 2016). Most teachers today also report inadequacies in their own skills to instruct children on these matters (Selwyn, 2020).

- Main obstacles to the effective usage of technology in education. Some key considerations are working against the efficient incorporation of technology in schools. First, the lack of equitable access to technology is still an issue. Second, the lack of an organized technology curriculum leads to disjointed learning outcomes. Third, the lack of adequate professional development for educators on technology ethics and practices is a problem for many educators today. Last, the lack of organized school policies on technology conduct practices creates confusion for educators, too, about their expectations of them on the technology and practical strategies for schools. The following strategies can be employed by schools: Include technology literacy & ethics integration throughout the curriculum, offer professional development for teachers on both technical skills and ethics. Arrange practical sessions for the students, including projects on the creation of digital content, the detection of misinformation, or conversations about online conduct. Ensure the implementation of proper technology usage policies. Encourage parents' involvement in encouraging proper technology usage within their households. By integrating technical skills with ethical concepts, the student is equipped to apply technology ethically. Ultimately, the point is to help educators, policymakers, or really anyone interested in the future of technology in schools to realise that teaching technology is much more than just teaching software or hardware; it really is about teaching the ethics of the technology, because the world we are raising children in will be an online world.

2. MATERIALS AND METHODS

Digital literacy is viewed as an important skill in the educational paradigm, especially within the context of the global shift towards online learning, caused by the COVID-19 outbreak (Alexander Jan van Deursen, 2022). In recent literature, researchers reveal that even if operational skills are mastered, students show poor skills in the areas of critically appraising the internet, protecting their own data, or respecting ethics in their online interactions. The same is seen on the teaching side, with many teachers having improper skills in the teaching of ethics on technology, which adversely affects their teaching, according to UNESCO (2025) Agenda, and Selwyn, (2020), with other studies pointing to system barriers, where socio-economic differences create inequalities in the availability of technology, with UNESCO, (2030) Agenda, stating that, even if efforts are made to create appropriate solutions, the lack of integration of ethics into the curriculum contributes to chaotic experiences for students, with Livingstone & Sefton-Green, (2016), noting the lack of appropriate initiatives for a framework that would ensure the safe use of the internet by students, with the result that this lack creates confusion among students and teachers. Despite the challenges mentioned above, the literature suggests that interventions, including staff development, student projects, or the creation of common policies, result in improved digital literacy, leading to well-prepared students who are equipped with the necessary skills required due to rapid technological advances. The adoption of teaching guidelines, ethics, and protocols empower students to engage with the internet responsibly, according to Livingstone & Sefton-Green, (2016). The study relies on both qualitative and quantitative data, which are collected from the selected sample of students and teachers from the secondary schools in Greece and Europe. The data sources are: Surveys consisted of questionnaires aimed at assessing the basic digital literacy competencies, ethics, and routine technology usage of students and lecturers alike. Interviews: Semi-structured interviews with educators have provided valuable information on challenges, perceptions, barriers, and best practices. The analysis of documents consisted of scanning literature databases, such as Google Scholar, Scopus, and educational publications on the topic of digital literacy/ethics. The literature published between 2020 and 2025, will help to provide recent information. This study will use descriptive, analytical, and comparison methods: a) Analysis of the survey: (OECD, 2023). The survey includes 450 students and was subjected to descriptive statistics analysis with the intention of determining the mean scores of the responses. b) Analysis of Qualitative Interviews: The coded interviews of 120 teachers revealed some common themes and challenges. Thematic analysis facilitated the interpretation of attitudes, perceptions, and practical challenges. c) Comparative Analysis with Literature: The data were compared to international literature ranging from 2020 to 2025, putting the current study into context with existing bodies of work on the same topic. The survey question design was also guided by the literature review undertaken, with the current best practices in the field taken into consideration. Informed consent was obtained from all the study participants. The data were made anonymous in order to maintain their privacy. The study maintains the highest levels of integrity in its conduct, following the guidelines on ethics in research. By adopting the mixed-methodology study design, triangulation of the results is made possible, allowing quantitative data to be supplemented with the perceptions of the study population, hence offering greater validity to the study findings. Also, by incorporating the

recent literature, the study conclusions are made contemporary, with the inclusion of the perceptions of teachers/lecturers as well as students, allowing the study findings to be applicable to the school context.

3. RESULTS

Table 1 below highlights the final results on digital literacy competence and ethical awareness among 100 students and 50 teachers. The results indicate that teachers scored higher than students on all fronts. Regarding basic digital competence, 92% of teachers showed competence as opposed to 78% of students, implying that teachers were more conversant with the basics of digital technology, such as use of email, online learning, and word processing. In relation to critically evaluating digital literacy, only 41% of the students demonstrated the competence to critically judge online sources' credibility and reliability, while 63% of the teachers demonstrated this **competence**. This indicates a serious challenge for the students to be able to identify credible online sources. Both demonstrated a lack of ethical awareness online, encompassing knowledge about privacy, plagiarism, copyright, as well as being able to communicate with others in a respectful fashion. This knowledge was achieved by 37% of the students and 54% of the teachers. Another set of safe online behaviors, focusing on technology, showed poor performance, as only 29% of the students and 48% of the teachers were applying these. Teachers showed more confidence in applying technology to educational purposes than students (66% compared to 52%), although confidence is not always a precise measure of proficiency. It is also notable that formal training in digital literacy or ethics within the past 12 months is a relatively limited experience for both students (18%) and teachers (27%). In a general context, it appears from the results obtained that, compared to students, teachers do have a stronger skill set as well as confidence. It is apparent, however, that both teachers as well as school students have challenges concerning ethical awareness as well as safe use of technology.

Table 1. Summary of Key Findings on Digital Literacy and Ethical Awareness

(N = 570 participants) Students(N=450)Teachers (N=120)

Category	Indicators Measured	Student--	teacher	Interpretation
Basic Digital Skills	Ability to use standard digital tools (email, LMS platforms, word processing)	78%	92%	Teachers demonstrate stronger fundamental digital proficiency.
Critical Digital Literacy	Ability to evaluate credibility and reliability of online information	41%	63%	Students show significant difficulty in critically assessing online sources.
Online Ethical Awareness	Understanding of privacy, plagiarism, copyright, and respectful communication	37%	54%	Ethical awareness is insufficient in both groups, particularly among students.
Safe Technology Practices	Use of secure passwords, avoidance of suspicious links, data protection habits	29%	48%	Practical online safety habits are weak across participants.
Confidence in Technology Use	Self-reported confidence in integrating technology into academic tasks	52%	66%	Teachers report greater confidence, though not always aligned with actual skill level.
Access to Training	Participation in digital literacy or digital ethics training in the last 12 months	18%	27%	Limited access to structured training remains a key barrier for both groups.

Source: Author research

4. DISCUSSION

This study highlights the problems which affect digital literacy and ethical awareness among students and teaching staff. (Kurt & Köseoglu, 2024)The educators achieved higher results than learners did in all three assessment areas which included digital skill foundation and online information evaluation and educational technology usage methods. The research findings support previous studies which demonstrate that teachers spend more time with digital tools while receiving professional development opportunities (Ferrari, 2013). The two groups showed similar low performance in understanding ethical standards and following safe technology usage protocols. People who have technical abilities do not automatically become responsible digital users (Martín et al, 2021). The research findings match recent studies which study how students and teachers use digital technologies ethically (Livingstone & Sefton-Green, 2016).Students and educators participated in minimal numbers of digital literacy and ethics training programs because only 18% of students and 27% of educators reported taking part in such programs during the previous year. The low numbers of reported training programs demonstrate that institutions fail to provide sufficient

ongoing support for essential technology and ethics education. A major gap: students use digital technology extensively but do not know enough about it, while teachers know that digital ethics is important but do not have the support to teach it adequately. Thus, the way students behave online is shaped more by social media, influencers, and internet trends than by schools. This is dangerous. Students learn to use technology quickly, but they don't feel the need to ask questions about it. They share personal information without realizing it. They trust what they see online without checking it. They often believe that what they say online has no negative consequences. At the same time, many schools view digital tools as mere add-ons. They do not see them as part of what shapes who you are, what you think, and what interests you. The study also shows a lack of fairness. Children who have more help at home learn to be more careful online, while others remain passive consumers. This leads to social and academic imbalance. In short, if schools do not choose to teach good digital behavior, then the online world becomes the main teacher. And that world will stop prioritizing safety, deep thinking, or ethics.

5. CONCLUSION

The analysis of digital skills and, specifically, what is morally right or wrong on the internet revealed positive and negative aspects for both students and teachers. Teachers appear to be more knowledgeable and aware of digital technology. They are better at controlling data and risks on the internet. They feel more comfortable using the tools. Children lag behind in this respect. However, both groups have major shortcomings in distinguishing between what is right and wrong, as well as the dangers hidden on the internet. This means that they do not know and do not properly manage the origin and real purpose of digital technology, the consequences of violating other users' personal data, and how to behave ethically with this new technology. Simply knowing about technology and how to use it properly from a technical point of view is not enough to make up for the shortcomings of the above groups. (Jesson & Hero, 2020) Handling, behavior, and good ethics on the internet should be a key part of tech education in the future. The limited time devoted to technological literacy and training in the use of applications, i.e., what is right and wrong, and the existing shortcomings make things much worse. Research has shown that very few students or staff have been retrained or taken new digital technology courses recently. This has resulted in a lack of planning and proper development of digital technologies, and consequently, difficulties in integrating new technologies into schools. Immediate intervention by the state is required so that children can understand the new technology, become familiar with it, and usher in a new era in schools. Teachers are lagging behind and are not yet ready to teach and guide children. This significant gap highlights the need to change school rules and the way technology and ethics are taught in schools. Teachers must continue their training. Children must continue to practice and learn new technology; they must learn to judge what they see correctly, identify false information, and understand the consequences of bad behavior on the internet. Schools must provide easy-to-use tools and brief but repeated discussions on the safe use of technology. In short, being technologically competent means more than just knowing how to use digital tools. Competence means thinking carefully, recognizing risks, and using technology safely and ethically. Lawmakers, educators, and all those concerned must take action and not allow this opportunity for children to be wasted; they must actively participate in this digital transformation.

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