

REVIEW OF RESEARCH

Specialized Unit: Digital Well-Being

Introduction

While digital education is not new in the United States, it remains fragmented. For example, current digital education tends to focus on privacy, safety, and digital relationships (Lauricella et al., 2020), with limited, inconsistent instruction on digital balance and well-being, healthy habits, ethical artificial intelligence (AI) use, and human skills. As technology becomes inseparable from learning and daily life, structured digital well-being education is critical to help students use digital tools safely, responsibly, and in ways that support—not undermine—their learning and long-term development.

In the Digital Well-Being specialized unit, lessons and activities are designed to strengthen the full range of digital competencies—spanning digital literacy (including information, media, and AI), ethical and responsible technology use, and the ability to balance digital engagement with personal well-being. Central to this unit is the belief that students are active agents, not passive users: they draw on core human skills, such as critical thinking, self-awareness, relationship skills, and responsible decision-making, to navigate digital environments and interact with others. By emphasizing human skills and agency, the unit empowers students to shape their own digital experiences and contribute to positive, respectful online communities.

Digital Literacy

Digital literacy refers to the knowledge, skills, and attitudes that allow people to flourish and thrive in an increasingly global digital world, being both safe and empowered (Nascimbeni & Vosloo, 2019). With the rapid development of digital technology, digital literacy has the “potential

to shape life chances in multiple ways” (Robinson et al., 2015), including academic performance, job market competitiveness, and participation in social matters.

Children and young people may seem adept at using digital tools, but this doesn’t mean they are digitally literate. For example, when it comes to online information, young people often express high confidence in their judgments but struggle to detect false information (Kops et al., 2025). A vital component of information literacy is critical thinking—the ability to evaluate the trustworthiness of information, such as by looking for evidence to support claims and evaluating the plausibility of arguments (Kops et al., 2025; Machete & Turpin, 2020). In this unit, students will practice using critical thinking skills to assess the credibility and reliability of digital information.

Children and adolescents are not just information consumers or passive users of technology—they actively shape digital environments through the content and digital assets they create. Research suggests that when students use digital technology in active and creative ways, they are more likely to benefit from these digital experiences (Canadian Paediatric Society, 2019). Throughout this unit, students in all grades engage in various collaborative activities to practice their digital literacy skills and experience constructive use of digital technology to promote digital and community well-being.

Safe and Positive Digital Spaces

Today’s youth are true digital natives, spending significant amounts of time working, interacting, and building relationships online. In these spaces, they form new connections and strengthen existing relationships, making digital environments a central part of their

academic and social lives. Research shows that positive, supportive online interactions can foster connection, belonging, and meaningful relationships (Nagata et al., 2025; Valkenburg & Peter, 2011). As young people actively shape these environments through their choices and behaviors, it is essential that they learn how to engage responsibly and respectfully online. In this unit, K–12 students develop and practice key digital skills and etiquette to communicate and collaborate effectively. They also learn strategies to manage their online behavior with intention—using empathy, respect, and sound judgment—to help create positive digital spaces that benefit both themselves and others.

While positive interaction online introduces opportunities for youth development, certain behaviors and experiences could increase risks. A long-time concern over youths’ digital experiences is too much self-exposure online and sharing private information that may expose them to risks such as negative comments (Koutamanis et al., 2015), minor-targeted advertising (De Veirman et al., 2019), or even sexual victimization (Madigan et al., 2018). In this unit, students learn about the importance of digital privacy and the impacts of their digital footprints. Through engaging activities and group work, students explore ways to enhance their privacy settings, avoid digital traps, and stay safe while using digital technologies.

Negative peer interactions such as online bullying and exclusion also undermine youths’ online experiences and individual well-being (Kowalski et al., 2014). Online bullying is typically defined as aggression that is intentionally and repeatedly carried out in an electronic context against a person who cannot easily defend against it (Smith et al., 2012). Research suggests that online bullying is widespread among school-age children (Juvonen & Gross, 2008; Katzer et al., 2009), and it has been related to a range of negative outcomes, including anxiety, depression, and decreased school functioning (Beran & Li, 2008; Mitchell et al., 2007; Ybarra et al., 2007). Unlike traditional bullying, online bullying leaves a permanent digital footprint. The internet’s “memory” means hurtful content can be stored, shared, and viewed indefinitely, causing continuous damage even if the bullying incident wasn’t repeated. In this unit, students in middle school will learn more about online bullying and explore safe and responsible ways to respond to online harms.

Another interpersonal online risk involves predatory behaviors targeting minors. Roughly one in nine youth

(11.5%) have been targeted by requests from peers or adults to engage in sexual talk or activities (Madigan et al., 2018). Online predators often exploit vulnerabilities of youth, trying to take sexual advantage, causing harm or distress (Joleby et al., 2021). Although the activities in this unit do not explicitly discuss sexual predation, high school students learn how to notice signs of exploitative and predatory behaviors and practice strategies for dealing with such risks.

AI Literacy and Ethical, Responsible Use of AI

Artificial intelligence (AI) refers to computer systems that can perform tasks that ordinarily require human intelligence, including visual perception, speech recognition, and decision-making (Chassignol et al., 2018). About one-third of parents report that their child has used artificial intelligence (AI) to learn about school-related material (29%; Mann et al., 2025), and about half of high school students use generative AI tools for schoolwork (Adair et al., 2025). While AI can be helpful in many cases, students and adults also have multiple concerns over AI, including excessive use, inaccurate information, data leakage, scams or frauds, losing important human skills (for example, learning skills), bias, and discrimination (Adair et al., 2025; Mann et al., 2025; Nadelson et al., 2025).

While AI technologies are evolving fast, AI regulations and policies vary significantly across institutions. While some schools implement total bans, others delegate policy-making to individual teachers or departments to align with specific learning objectives (Adair et al., 2025). With the fast development of AI technology and its application in school and daily life settings, it’s imperative that students understand the usefulness and potential risks of AI through lenses of data privacy, security, and algorithmic fairness (Döger & Göçen, 2025).

Ethical and responsible use of AI necessitates a “human in the loop” model, where students play active roles to interrogate AI outputs and verify information through critical thinking (Wall et al., 2025). Responsible use empowers students to maintain their own agency rather than becoming passive recipients of information. In this unit, students gain a better understanding of AI by learning about pros and cons of AI and using their human agency to evaluate applications of AI in the real world.

Digital Well-Being

The vast majority of children begin using the internet at some point between second and sixth grade, with most (52 percent) online by third grade. Nearly all kids (97 percent) reported being online by the time they are in eighth grade (Flanagin et al., 2010).

This phenomenon of being “permanently connected” (Vanden Abeele et al., 2018; Vodrderer et al., 2016) is found to distract users from work and study (Duke & Montag, 2017; Lanaj et al., 2014), contribute to sleep and health problems, and cause digital addiction (Büchi et al., 2019; Bitto Urbanova et al., 2023; Lanaj et al., 2014; Reid Chassiakos et al., 2016). In fact, compulsive use of internet or internet addiction is found to be a major risk for youth (Pontes et al., 2015). Another concern is “displacement,” meaning that time spent on social media may replace essential activities such as sleep or in-person interactions (Bitto Urbanova et al., 2023; Nesi et al., 2018).

The Digital Well-Being unit includes lessons, activities and family resources that introduce research-based strategies to promote a balanced use of technology, including healthy time management, meaningful screen use, positive modelling, and balanced, informed monitoring of screen time and behaviors (Canadian Pediatric Society, 2019). Lessons and activities in this unit help students regain control of their digital usage, build healthy digital habits, and create positive digital spaces that foster well-being.

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