Digital Ethics and Equity in K-12 Blended and Online Learning

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1 Background

The COVID-19 pandemic drew national attention to the already prevalent practice of K-12 online and blended learning as well as to the underlying systemic inequities in society that permeate all institutions—including educational institutions—within the United States. Historically, online ecology has included a wide swath of tools, sites, and online places. Today, however, learning technologies have enclosed and interwoven themselves into the core of teaching and learning. Whether learning in a virtual or face-to-face environment (or somewhere in between), students' educational experiences depend on and are influenced by elements of online learning. Accordingly, online and blended learning have the potential to further magnify educational opportunity gaps if high-quality online learning experiences differ systematically by sociodemographic background.

For this chapter, we define K-12 online learning as any fully digital, internet-based, or blended (i.e., part online, part face-to-face) form of education where technology integration is used to deliver some or all of the instruction within a classroom [1]. This encompasses a wide swath of learning environments, ranging from fully asynchronous, online courses where students receive no (or minimal) face-to-face interactions with instructors and peers to technology integration within a traditional, face-to-face classroom setting. We focus primarily on the United States educational context in this synthesis although we hope themes may have relevance to other contexts as well.

Concurrently, we define educational equity as providing every student the resources, tools, supports, experiences, and interactions required to reach their learning potential [2]. Equity is more than access, and equality (i.e., equal access) is insufficient to achieve equity. Instead, every child deserves an educational experience that aligns with their unique strengths, needs, and funds of knowledge. Existing educational opportunity gaps are symptoms of broader policies, practices,

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and norms that perpetuate and legitimize existing power dynamics in society [3]. Truly equitable learning (online or otherwise) requires dismantling these underlying systems.

Accordingly, we seek something other than a technocratic solution to a social problem. Instead, we provide a roadmap to enacting a more equitable educational system and highlight the role online learning might play in supporting that broader goal. To accomplish that, we must acknowledge that technology is not neutral. Like the broader school system, technology often reflects and replicates existing systemic inequities through differential use, algorithmic biases, surveillance, built-in normative assumptions, online harassment, etc. [4]. These underlying inequities must be challenged for technology to operate within an equitable education framework. To accomplish these aims, we begin by summarizing the current state and common practices within K-12 online and blended learning before proposing a reframing of the educational goals and process of technology use in schools. We conclude with suggestions for future research and recommendations for policymakers and educators.

2 Current State

One of the best-documented strengths of online and blended learning is its ability to facilitate one of the precursors for equity—access to quality educational content/tools/resources [5, 6]. Online and blended instructional approaches are also being used to offer greater flexibility and self-pacing in learning, which can be helpful for students with sufficient self-regulation [7]. Additionally, educators can use online resources and tools to improve students' educational experiences by providing real-time data on student progress, delivering just-in-time, formative feedback, and removing time and geographic-related barriers to communication and collaboration with students, teachers, and content experts [5, 8]. For instance, in one school, students used technology-based tools to collaborate with museum staff and tribal leaders to learn about and create a digital exhibit of Indigenous artifacts [9]. This activity supported students in deepening content knowledge, developing technical skills, and fostering Indigenous identity and connection.

Despite these bright spots, research on online learning has also revealed substantial variation in how online instruction is enacted in schools, with some studies pointing to the potential for online learning to worsen rather than reduce inequities in learning opportunities [10]. For example, adapting the content and logistics of instruction (i.e., pace, order, location, and lesson material) for individual student needs can be especially beneficial for students with learning disabilities or those who may need additional academic support in specific content areas [11]. Yet school districts that lack adequate resources or support for expanding blended learning models often resort to "drill and practice" strategies on lower-order skills in the use of online learning tools, with low-income and Black students more likely to experience these modes of learning [12]. Other constraints on the implementation of effective online learning practices include high turnover among teaching, administrative, and technology support staff, higher student–teacher ratios, and competing demands for resources that could be used to enhance blended instruction.

In addition to implementation concerns, research also suggests the need to be more attentive to the content accessed through online learning platforms and applications. Much of the content development for online learning is commercially driven, where the companies creating the tools operate with the goal of maximizing profit [13]. Content is often designed by private vendors with the "modal" (White, middle-income, average academic achievement) student in mind, with limited options for reflecting or adapting the content to students whose lived experiences, cultural norms, or learning needs fall outside that narrow privileged group [14]. Widely used online learning platforms often provide limited opportunities for students to engage in authentic work—work that encourages students to solve new and interesting questions, investigate a topic in-depth, and communicate ideas with others, or consider how it applies to

situations outside of school [15]. A recent study using an observation rubric to quantify the presence of authentic work in over 400 lessons created one of the largest course vendors in the United States found that fewer than a quarter of lessons provided opportunities for students evaluate, synthesize, or create content [16].

Beyond the online platforms and tools, school norms and priorities also shape and constrain the instructional environments that students experience, with students belonging to dominant cultural groups more likely to be encouraged to engage in digital play-based learning and learn how to be digital content creators as well as consumers. Digital play encapsulates the skills and experiences students gain from communicating, playing, interacting with, and creating content online extracurricularly. In a comparative ethnographic study of digital use in schools, Rafalow observed that teachers of students from more affluent backgrounds valued, encouraged, and integrated features and knowledge gained from digital play in the classroom, while the teachers of students from less affluent backgrounds considered digital play as threatening or useless [17].

Finally, using a software application that monitors activity raises privacy concerns when commercial companies, third-party vendors, or advertisers have access to student data, often without student knowledge or consent. Personalization tools may also create profiles of students based on their academic performance, learning disabilities, or other personal characteristics, potentially leading to stereotyping or discrimination. Further, we expect to see an increase in artificial intelligence in educational applications and platforms in the near future; when algorithms and data used to train an AI system contain bias, then the system will replicate and amplify that bias.

2.1 Reframing the Target

In contrast to the emphasis on access issues in current conversations around online learning, enacting truly equitable online and blended learning requires reframing the target. The real promise and pathway to digital equity involve democratizing education and learning practices. For many young people, online spaces have served as outlets for community building, activism, and counterstorytelling [18, 19]. Similarly, many promising online platforms and learning strategies leverage the increased ease of technology-based communication to allow a variety of voices to be heard and critical dialogues to occur.

Leveraging learners' technology use outside of classroom spaces is more complex than merely giving learners technological devices for educational use [20]. Attention must be paid to how learners interact with the technology itself and how they interact with other learners and instructors. Learners' adaptations and use of these informal digital spaces, as well as the unique features of digital platforms for academic purposes, demonstrate the ways that they assert agency over their own learning experiences. To accomplish this, the role of the educator is crucial in building opportunities to pause, reflect, and build toward meaningfully engaging with students before technology integration. Considering the rich funds of knowledge abundant in classrooms every day, we must redefine the socioeconomic forces underlying teaching, pedagogy, and definitions of learning.

3 Future Research

With a few exceptions, the majority of online learning research maximizes possibilities and minimizes perils. This has resulted in research on best practices but little understanding of potential harms due to issues of surveillance capitalism, data (in)justice, racialized and gendered constructions of online spaces, privatization, and philanthrocapitalism. In this section, we propose lines of research to recognize these pitfalls and identify systems and processes that can support more equitable online and blended learning.

First, we call for research that interrogates issues of data justice and considers the intersection of data surveillance and online education, integrating discussions of power and bias. When

online learning platforms monitor students, this surveillance can be racialized, resulting in discriminatory outcomes [21]. Online learning research needs to be attuned to these racialized elements of surveillance in order to identify ways that online learning can reduce opportunity gaps instead of exacerbating them.

Second, the consistent underfunding of public education invites private companies and philanthropies to "solve" education problems with technology [22]. At the expense of high-quality learning environments, providers lower costs by delivering static course content, lowering content quality, reducing, or eliminating instructional support, using technology to police students, and limiting or censoring content [23–25]. This raises further equity concerns as schools are more likely to distribute lower-quality products to students in ways that are racialized, and underfunded school systems are more incentivized to buy cheaper online learning products [26]. We invite more research that inquiries into the impacts on children and society when private companies insert themselves into public education, bringing with them their logics of efficiency and competition in ways misaligned with the goals of public education as a common social good.

Third, researchers should not ignore online learning's placement in the same online ecosystem as social media and the broader attention economy [27, 28]. Social media, mobile apps, and online games are designed to be addictive [29], and coding embedded in these platforms is racialized in ways that perpetuate societal inequalities. Consequently, research should engage in issues related to equity and the addictive elements of technology (i.e., the attention economy) as well as the extent to which (and how) online and blended learning can be structured to allow students to productively engage with these platforms.

Finally, we encourage continuing scholarship on the ways young people engage in counternarratives, social actions, and justice-oriented work in online spaces. Youth-led inquiry and media projects like Wide Angle Media [30] in Baltimore and the Young People's Race Technology and Power Project (YPRPP) [31] in Chicago provide examples of online curricula that confront injustice and spur civic action. Wide Angle Media accomplished this by teaching students to create documentaries and social media content on important local topics such as truancy, homelessness, and the Baltimore Uprising. YPRPP focused more explicitly on encouraging students to engage with and consider the ethical implications of technology use through inquiry-based units on cryptocurrencies, social media and mental health, fashion and 3D design, video games, and cybersecurity. These examples offer opportunities for race and gender-conscious research on the intersection of identity, young people, and online learning. There is also a unique opportunity to examine the discourse and decision-making processes of learners in these digital spaces. A deeper understanding of how learners use technology in their daily lives might also uncover strategies for realizing the promise of online learning.

4 Recommendations

Below, we provide research-based recommendations for how to close the gap between the reality and potential of K-12 online and blended learning.

4.1 For Policymakers

- Fund high-speed Internet like a public utility, increasing access to online learning for students in and out of school.
- Protect student privacy and students from advertisements on learning platforms.
- Monitor the purposes and use of data collected through digital tools and tightly restrict its linkage to databases of families, students, medical, and educational records.
- Democratize and make transparent EdTech vending and purchasing decisions.
- Create equitable school funding models that allow schools disproportionately serving marginalized student populations to be able to afford high-quality online and blended learning tools.

4.2 For Educators

- Provide all students the opportunity to engage in learning as content creators, not just consumers, through digital play and media making.
- Safeguard student privacy by limiting data stored on online platforms and particularly LMS systems.
- Evaluate online learning programs, tools, and integration practices for their impact on educational equity and student well-being, considering aspects of differential use, algorithmic biases, built-in normative assumptions, etc. Center the findings from these evaluations when making purchasing, curricular, and teaching decisions.
- Leverage technology to provide opportunities for student agency, autonomy, and voice in the classroom. Consider mediums through which students can express themselves and share their experiences, opinions, and knowledge with peers and their community.

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