Chapter 18
Tech-Savvy Is the New Street Smart:
Balancing Protection and Awareness

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ABSTRACT

In response to technology developments during the first decade of the century, K-12 schools in the USA began to design and develop a variety of blended learning initiatives. The hope was that technology could better address the challenges related to college and career readiness in a rapidly evolving world, and to close the performance gaps between low-income students and their more privileged peers. By 2012, large urban districts began to implement one-to-one device-to-student environments at scale. Districts and educational organizations alike became concerned with the balance between legislation to restrict uses of technology and data to inform learning and the need for digital citizenship competencies for educators and students alike. This chapter reviews recent efforts and resistance against excessive legislation which could create unintended results, including fewer opportunities for underprivileged groups, and to advocate in favor of the systemic inclusion of digital citizenship imbedded in already existing curriculum.

INTRODUCTION

This chapter addresses administrative and pedagogical issues related to digital citizenship and media literacy, as they have emerged through the use of technology and the internet in K-12 education. The author provides an overview of the introduction of educational technology in K-12 education during the last decade and discusses subsequent concerns that emerged as a result of its uses in the classroom from the perspective of student data privacy, security, internet safety, and student agency.

The information presented is not meant to be taken as a survey of all K-12 initiatives in the U.S. Rather, the chapter evolves as experienced by leaders in a large U.S. urban district that pioneered a well-documented one-to-one (laptop-to-student ratio) program and explains how the experience provided arguments in favor of embedding media literacy in the curriculum. The narrative includes a discussion

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of the contributions of educational organizations, unintended consequences as a result of the nationwide push in favor of additional legislation, and the philosophical shift from "acceptable" to "responsible" uses of technology in education. The author advocates for the inclusion of numeracy and media literacy competencies in teacher education as well as their insertion in K-12 curriculum to promote student success in college, career and life. Finally, the chapter includes a section related to technology innovation, in particular the potential positive and negative implications of the use of Artificial Intelligence (AI) and Internet of Things (IoT) in the classroom.

BACKGROUND

Technology Goes to School

Computers and software made their initial entrance into educational institutions as effective tools to manage databases and in the form of personal computing. In the latter case, they were used primarily for word processing and graphic design. The World Wide Web was officially launched in 1991, CERN published the first World Wide Web (www) source code in 1993, and Tim Berners-Lee founded the World Wide Web Consortium in 1994 (CERN, 2019). Higher education adopted the internet's environment in the late 90s to supplement and enrich learning and research. K-12 education did not incorporate technology or the internet in a significant way until subsequent developments made it obvious that it could deliver benefits for all students in the form of authentic learning, participatory communities, student agency (Jenkins, Ito, & Boyd,. 2016), and other learner-centered methods intended to prepare students for the 21st century. Soon after the introduction of learning technologies, district leaders began to address the question of student data privacy and security, internet safety. and digital citizenship (Arnillas, 2018).

In the United States, the terminology around data privacy, security and safety tends to be relatively consistent and guided by legislation, such as the *Family Educational Rights and Privacy Act* (FERPA), the *Protection of Pupil Rights Amendment* (PPRA), *The Children's Online Privacy Protection Rule* (COPPA), and the *Children's Internet Protection Act* (CIPA). More recently, the European Union implemented the *General Data Protection Regulation,* commonly referred as GDPR (European Commission, 2018). GDPR has had repercussions for United States K-12 learning technologies because the regulation applies to any European citizen, even those studying abroad or taking distance learning (virtual) courses.

In contrast with the proliferation of state laws to protect student data (Vance, 2016), the discourse surrounding the case for educating teachers and students on the responsible and effective uses of technology remains inconclusive. One can find a large amount of anecdotal work related to the discourse concerning secure, effective, and responsible uses of technology in K-12 education. This chapter provides information about events and organizations that have guided and influenced the decisions made by K-12 practitioners in the last ten years.

The most urgent administrative task following the introduction of technology into the classroom was protecting student data privacy and securing schools' networks. The case for updating legislation was initially led *The Parent Coalition for Student Privacy* following the implementation of an innovative program funded by the Gates and Carnegie Foundations. The Consortium for School Networking (CoSN) developed a body of resources and skill-building programs to support and educate districts, so they could place filtering, blocking and controls to keep student data safe (Arnillas, 2018).