Chapter 11
Updating the US K–12 Information Technology Curriculum

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ABSTRACT

This chapter reviews recent research related to students' educational device use, online content consumption, and students' understanding of content providers' algorithmic targeting practices to make the case for a new information literacy content area that encompasses a comprehensive and responsive education initiative focused on maintaining students' autonomy and wellbeing. By examining the great extent to which online content providers' large-scale switch to algorithmic, responsive, individualized content provision proliferates, this chapter makes the case that students' (and teachers') lack of engagement in this regard makes for a crisis of sustainability. The chapter situates the need for systemic adaptation to this new reality as overdue and urgent.

INTRODUCTION

Information literacy is a critical component of contemporary K–12 education within the United States. Here, the widely-adopted 2010 Common Core Standards—the deeply influential (if also controversial) set of skills, knowledge, and understandings that has served as a touchstone for countless American schools' curricular initiatives—emphasized the importance of mastering informational texts (National Governors Association Center for Best Practices, Council of Chief State School Officers, 2010). Now, 12 years following the Common Core Standards' publication, substantively altered circumstances and conditions regarding the fundamental nature of information literacy necessitate the reevaluation of information literacy's treatment within US public schools. This action is fundamental to the sustainability of a progressive society that values personal autonomy, free discourse, and the right to know the extent to which one's digital experience is algorithmically influenced.

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The circumstances and conditions that have changed are those focused on the ubiquitous role of the internet in nearly all Americans' lives (and in, of course, the lives of those throughout the world). Internet users no longer access and share a standardized online experience to the extent that they did in 2010. Today, users engage what this researcher calls the *Personally and Algorithmically Curated Internet Experience* (*PACIE*). Contemporary internet users' input is analyzed, aggregated, and evaluated according to often proprietary algorithms designed to optimize online entities' desired outcomes (Grandinetti & Bruinsma, 2022; Shin, 2020). The PACIE spans devices (e.g., computers, tablets, mobile phones, watches) and sectors (e.g., education, commerce, finance, socialization, healthcare). As algorithmically driven content provision becomes more personalized, Shin (2020) highlights (in the context of journalism) how important it is "to tackle the ethical and legal issues caused by utilizing data and algorithms to target users, such as fairness, accountability, transparency, and explainability (FATE)" (p. 542). As these issues remain actively debated and analyzed by adults across sectors and industries, school-aged children are access algorithmically driven content. It is now essential for schools to respond and adapt to this reality by instituting K–12 curricula focused on the PACIE.

As the PACIE permeates nearly every aspect of online decision-making—what to eat, what to wear, what to watch, where to go, how to arrive, what to know—it is critical to the sustainability of US public schools that the PACIE's ubiquitous permeation is treated as a distinct knowledge domain (e.g., English language arts, social studies, mathematics, science) in and of itself. The PACIE is worthy of purposeful K–12 academic focus alongside English language arts, social studies, mathematics, and science because the PACIE is effectively these four core subjects' combined manifestation: aggregated information culled from a wide range of users' input and characteristics—demographics, opinions, behaviors, and actions—before it is actionably pointed toward content providers' preferential outcomes.

The PACIE's evolutionary trajectory is, to this point, neither accidental nor complete. It is a purpose-built ecosystem in which user data has both relative and discrete value: relative, in that a wealth of users' input begets a personally curated, thus more relevant, online experience; discrete, in that a wealth of users' data—purchased for real money—yields leverage for companies and content providers in potential advertising revenue, website traffic, and content consumption. Teaching K–12 students to master this medium's intricacies requires researchers, policymakers, postgraduate teacher training programs, educational administrators, teachers, students, and students' families (among others) to rethink and ultimately reposition information literacy within US public schools' curricula as a responsive, continually updated endeavor that is both in the interest of students as individuals and in the interest of a progressive society.

RESEARCH QUESTIONS

This chapter explores three research questions:

- To what extent does the PACIE influence students' lives?
- To what extent are the US's K–12 schools positioned to educate students about the PACIE?
- To what extent do PACIE-focused education policies and practices targeting students' wellbeing fit into the US's current K–12 public education paradigm?

To answer these questions, this chapter synthesizes research focused on algorithms' pervasiveness in online content provision, ethical concerns surrounding online content algorithmically targeted toward