Chapter 5

Technology–Integrated Curriculum and Students’ Academic Performance

James Dixon
University of Phoenix, USA

Libi Shen
University of Phoenix, USA

ABSTRACT

Technology is shaping our world persistently and swiftly every day. Does the use of technology improve teaching and learning as well as the overall quality of education at schools? To what extent are technology-integrated curricula in an elementary school correlated with students’ academic performance on statewide achievement tests? To what extent are technology-integrated curricula in an elementary school correlated with students’ computer literacy skills? The aim of this chapter was to identify whether a relationship exists between technology-integrated curriculum and students’ academic performance on statewide achievement tests as well as their computer skills in an elemental school in Alabama. Data were collected through a survey questionnaire and archival data. The participants were 113 fifth grade elementary school students. Results from the study and recommendations for school administrators, teachers, and students are provided.

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INTRODUCTION

Technology has changed significantly how teachers teach and how students learn in the last few decades. Students’ educational needs can no longer be effectively met by using lockstep and seat time teaching models (Biech, 2016; Prensky, 2010; So & Kim, 2009). Technological advancement and knowledge transformation are occurring at an unprecedented rate (Kapp, 2012). Teaching methods and models developed centuries ago are not adequate for teaching digital natives in the 21st century (Lapadat, Atkinson, & Brown, 2009). Teachers may have to change teaching methods to engage students and motivate them to learn.

Several types of technologies have supported interactive collaboration from any place at any time (Cipolla-Ficarra, 2014). The most widely used technology in the classroom were computers and laptops (Martin & Carr, 2015). As a new medium of communication and collaboration, emerging interactive technologies offer unprecedented teaching and learning opportunities (Carnes, 2012). Mobile technologies (e.g., iPads, smart phones and laptops) support the use of applications (e.g., chat, word processors, drawing programs, desktop publishing programs, multimedia presentation tools, photo editors, movie-makers and sound editing) and enable interactive collaboration in the classroom. While students obtain digital literacy skills to interact with technologies, teachers may have to integrate technology standards into the curriculum to meet students’ needs.

Many researchers have explored the impact of technology-integrated curriculum in the classroom over the years (e.g., Bonk, 2010; Boulanger, 2008; Burke & Wang, 2010; Carnes, 2012; Costley, 2014; Harris, Al-Bataineh, & Al-Bataineh, 2016; Joan, Denisia, & Sheeja, 2013; Kanev, Kimura, & Orr, 2009; Kelsey, Meta-Claflin, Holland, & Castillo, 2011; Mbugua, Kiboss, & Tanui, 2015; Mothibi, 2015; OECD, 2015; Schacter, 1999; Turman & Schrodt, 2007; Yilmaz & Sanalan, 2015). Does technology-integrated curriculum contribute to students’ learning? Both positive and negative effects of using the technology in the classrooms were found in previous research. The purpose of this chapter was to identify whether a relationship exists between technology-integrated curriculum and students’ academic performance on statewide achievement tests as well as their computer skills at an elemental school in Alabama.

BACKGROUND

Students in Alabama’s public schools performed 30% lower on reading, language, mathematics, and computer literacy achievement tests than students in most other states (U.S. DoE, NCES, 2016). The high school dropout rate in Alabama was 29%
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