Chapter 18

Amani Abdullah Bin Jwair
Prince Sattam bin Abdulaziz University, Saudi Arabia

ABSTRACT
This chapter explores the quality of learning found when using the flipped learning (FL) approach in K–12 education to promote academic achievement and critical thinking skills, reduce seat time, and improve self-efficacy. The benefits of this approach are controversial, but no clear findings have demonstrated the superiority of learning in a traditional classroom over FL. One perspective claims there are several benefits to using FL in K–12, and many educators and experts assume using this approach in traditional classrooms could show great improvements in student outcomes. The second perspective points out that some educators and specialists have doubts about using flipped methods in traditional classrooms, drawing attention to the challenges K–12 education might face in implementing this approach. The overall findings of this chapter conclude that the benefits of the FL approach supersede the potential challenges. The chapter ends with new trends in the design and implementation of flipped learning in K–12 education.

INTRODUCTION
Modern technology has enabled the emergence of e-learning and distance education by changing the roles of teachers and students. However, these emerging transformations in the educational process fail to create a direct channel of communication between teachers and students. Educational theorists suggest the effective way for children to achieve a productive learning experience is to apply blended learning via...
the flipped learning (FL) approach. This method combines the features of the traditional classroom and serves a pathway to distance education online. Furthermore, this approach refers to a study method where teachers use videos or other supporting materials during class and then upload them onto a server, where students can access class lectures and content online before the next class. This method of instruction is expected to encourage efficient use of class time. This chapter examines the benefits of using the FL approach in K–12 education, including increasing academic achievement, enhancing critical thinking skills, reducing seat time without sacrificing face-to-face communication, and improving self-efficacy.

BACKGROUND

Due to recent technological advancements, many new active learning pedagogies have been developed to change the role of the instructor from the “sage on the stage to the guide on the side” (Parslow, 2012, p. 337), as well as to afford students the opportunity to engage in blended learning. The FL approach is a blended learning design that employs digital technologies to transfer learning tasks outside class time and uses learning activities constructively during class time (Flumerfelt & Green, 2013; Kong, 2014). The main idea behind FL is to dedicate extra class time to active learning; the role of the teacher in active learning is to provide assistance and immediate feedback to the students (Baker, 2012; Lage, Platt, & Treglia, 2000; Zappe, Leicht, Messner, Litzinger, & Lee, 2009). Instructors also employ class time for students to engage in problem-solving, advanced concepts, and collaborative learning (Tucker, 2012). According to Findlay-Thompson and Mombourquette (2014), FL helps educators teach both content and process in class.

The FL approach is a blended format that helps build an ideal constructivist learning environment, in which students develop a deep understanding of knowledge by sharing information and having access to appropriate resources (Kong, 2011, 2014). In such an approach, many tools are available to promote multiple levels of learning (lower and higher) inside and outside the classroom (Sarawagi, 2013). The FL approach allows students to engage in online pre-lessons by doing learning preparation, participating in group discussions, and engaging in collaborative learning inside a digital classroom; after-class learners also have the chance to extend their learning, such as by using a social learning platform (Kong, 2014). This blended format has been implemented particularly in K–12 because it helps “enhance student learning and achievement by reversing the traditional model of a classroom, focusing class time on student understanding rather than on lecture” (Acedo, 2018, para. 3). Students have more control and are better able to work at their own pace in this environment because FL promotes student-centered learning and collaboration (Dove, 2013; Hao & Lee, 2016), and lessons and course content are more accessible through new technology. Studies such as Chen (2015) and Moos and Bonde (2016) have implied that a major advantage of FL is that it allows students to be in control of their learning by using technology. Furthermore, class time is more engaging and efficient and increases student motivation (MacKinnon, 2015).

The Impacts of FL on K–12 Education

Increasing Academic Achievement

Educational theorists have claimed the FL approach is one of the best teaching methodologies to enable students to achieve a productive learning experience in schools, especially in K–12 (Bhagat, Chang, &