

# Flipping the Classroom: Influences on learning

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## Abstract

An evolution is occurring in teaching and learning. Teachers are striving to incorporate innovative strategies to engage learners. Learners are pursuing educational strategies that foster independent and group learning. Flipping the classroom is at the forefront of this evolution, a term that is defined within this article. Central to the definition is that learners conduct pre-class reading in advance of the class. The theoretical backgrounds of Constructivist Learning Theory and Experiential Learning are discussed as tenets of the flipped classroom, and a novel theoretical approach in providing USB sticks with a course syllabus, lectures notes, and required readings is introduced as enhancing learning. In addition, the influences of the flipped classroom are analyzed from the perspective of Talbert (2014): (1) Highly structured pre-class assignments; (2) Means of accountability; (3) Well-designed sense-making activities; and (4) Open lines of communication. Finally, advantages and disadvantages of the flipped classroom, from the perspectives of the teacher and learner, are described.

**Keywords:** *teaching, learning, flipping the classroom, constructivist learning theory, pedagogy*

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## Flipping the Classroom: Influences on learning

Teaching and learning is a complex, intertwined, and evolving phenomenon. Traditionally, teaching and learning involves lecture presentations conducted by teachers with learners passively participating in the learning process through memorizing and regurgitating information (Bates, Almekdash, & Gilchrest-Dunnam, 2017). However, a paradigm shift in teaching and learning is occurring; a new generation of learners is emerging which is actively seeking flexibility of delivery in their learning. As such, teachers are adapting and engaging in innovative pedagogical strategies

to engage learners, ushering in the phenomenon of flipping the classroom (Henderson, Selwyn, & Aston, 2015). In fact, flipping the classroom is at the forefront of learning amongst the millennial generation as this approach fosters their desire for experiential learning and supporting the learning of their peers (See & Conry, 2014). The center of the paradigm shift from the traditional transmissive lecture to flipping the classroom is the blending of technological mediums inviting learners to view the lecture(s) as pre-class preparation online through pre-recorded lectures on video, film and voice, thus leaving classroom time to focus on the class objectives and engage in discussion of the pre-class activities (Abeysekera & Dawson, 2015; Bergmann & Sams, 2012). This article analyzes the influences on learning in flipping the classroom. To support the analysis, flipping the classroom is defined. Next, a brief theoretical background of flipping the classroom is provided. Third, a low technological mode of pre-class preparation is theorized: providing a USB stick with the course syllabus, lecture notes, and required readings to learners. As well, the influences of flipping the classroom are explored through four concepts coined by Talbert (2014): (1) Highly structured pre-class assignments; (2) Means of accountability; (3) Well-designed sense-making activities; and (4) Open lines of communication. Last, advantages and disadvantages to flipping the classroom are identified.

### **Definition of Flipping the Classroom**

Multiple definitions of flipping the classroom exist in the literature. Generally speaking, it is a pedagogical approach where learning is student-centered rather than teacher-centered (Reyna, 2015). In this sense, flipping the classroom is a pedagogical model in which lecture and study elements are reversed (Jenkins et al., 2017). To be specific, flipping the classroom involves learners performing pre-class study of an objective prior to attending class. The subsequent class is then devised to discuss the objective(s) (Tanner & Scott, 2015). There are some disadvantages to having multiple definitions. A central disadvantage is the concept that flipping the classroom may represent different meanings to teachers, creating confusion in the classroom (LaFee, 2013). Specifically, confusion can exist in the mode of pre-class preparation, in-class and post-class activities of teachers and learners. Ultimately, learning may be negatively impacted and the success

of flipping the classroom compromised. As such, it is the author's opinion that teachers must be transparent with learners in communicating pre-class preparation and in-class and post-class activities through a course syllabus. Nevertheless, while multiple definitions of flipping the classroom exist; there is a central theme within the core tenet that learners will perform pre-class preparation and come to class prepared to engage with the material (Tucker, 2012).

### **Background of Flipping the Classroom**

Flipping the classroom in teaching and learning is not a new pedagogical strategy. It has been used in nursing classrooms for over a decade (Brame, 2013; Ferrari & O'Connor, 2013); along with other fields, such as pharmacy (Ferrari & O'Connor, 2013; Talbert, 2014), mathematics (Talbert, 2014), and engineering (Clark, Kaw, Lou, Scott, & Besterfield-Sacre, 2018; Talbert, 2014; Zappe, Leicht, Messner, Litzinger, & Lee, 2009). While flipping the classroom is not a new pedagogical strategy, research supports flipping the classroom in fostering learning. Especially in pharmacy and nursing, flipping the classroom has demonstrated improved exam results, grades, collaboration, and course completion rates (Missildine, Fountain, Summers, & Gosselin, 2013).

Flipping the classroom does not comprise a single teaching and learning theory. Rather, flipping the classroom adopts tenets of various learning theories. In constructivist learning theory, learners have the innate ability to complete learning activities independently. Moreover, this theory holds that interactions with teachers and peers have a positive impact on students' learning (Melrose, Park, & Perry, 2015). Simply put, constructivist learning views learners as self-directed and their learning is enhanced through interactions with the teacher and other learners.

Experiential Learning is a central pedagogical approach in the flipped classroom. Within experiential learning theory, learners develop cognitive, physical and emotional connections with the material by actively engaging and reflecting on their learning (Melrose et al., 2015). In other words, learning is accomplished through physical and cognitive immersion in the learning activity. In the flipped classroom, learners are actively engaged in their learning. Through learning by doing, learners in the flipped classroom are participating in experiential learning (Reyna, 2015).

## **Influences on Learning**

The USB stick is a low technological way of providing learners with learning resources, such as the course syllabus, lecture slides, and required readings. Providing the lecture slides invites learners to print the slides ahead of the lecture(s) presenting to class ready to engage in the learning process through discussion(s) as they are not writing down all the content on the slides while the teacher is explaining concepts. Learners may also take additional notes from the discussion(s). Unfortunately, the author found no research on the relationship between providing USB sticks with the course syllabus and lecture slides in enhancing learning. However, it is plausible this mode of preparing learners is in practice in classrooms. Interestingly, the author has discovered a single study supporting a relationship between providing a USB stick with a course syllabus and required readings to learners. Specifically, in a study performed by Chahla, Eberlein, and Wright (2010) investigating the influence of a USB stick on learning, fifty participants were provided a USB stick with a syllabus and required readings. The study revealed that providing this USB stick with syllabus and required readings had a positive effect on students' engagement with the course readings.

Providing a USB stick is a novel low technological approach to teaching and learning. Teachers are able to introduce many different modes that support learners in pre-class preparation. However, these modes are united by the central assumption that the flipped classroom is influential in learning. As previously mentioned, Talbert (2014) describes four central aspects of the foundation of flipping a classroom to be successful: (1) Highly structured pre-class assignments; (2) Means of accountability; (3) Well-designed sense-making activities; and (4) Open lines of communication. This section will discuss each of those four important aspects.

### **Highly structured pre-class assignments**

Central to this aspect is providing learners with a course syllabus. As previously discussed, providing the USB with the course syllabus guides learners on lectures, required readings, and activities to be completed prior to each lecture or in-class. This provides learners with the ability

to assume control over their learning (Tanner & Scott, 2015). Providing a course syllabus guides learners in recognizing course expectations and learning. In addition, it gives learners over the flexibility of when and where they learn the material. An advantage to providing the course syllabus, lecture notes, and required readings is it provides opportunities for the learners to demonstrate accountability in their learning.

### **Means of accountability**

This aspect ensures learners are completing the required pre-class reading(s) and activities. This may be accomplished through in-class discussion(s), presentations, and learning assessments, including: games; short essays; and quizzes. Quizzes are a common assessment tool to demonstrate completion (Tanner & Scott, 2015). Even a low-stakes grade percentage can motivate learners to engage in the pre-class learning activities and reinforces the required pre-learning activities (Kim, Kim, Khera, & Getman, 2014). An advantage to quizzes exists in supporting learners in staying current with the course content (Kim et al., 2014). However, a disadvantage is that not all learners perform well on quizzes: quizzes may evoke feelings of anxiety and discord to the pre-learning activities. Hence, the inclusion of other assessment strategies (in-class discussion, presentations, and games) may mitigate quiz anxiety and discord in the pre-learning activities.

### **Well-designed sense-making activities**

The key to this aspect is ensuring the chosen activity is well-designed and makes sense to the learners in accomplishing a learning objective(s) in the course syllabus. Correct application of this aspect by teachers ensures learners have the opportunity to engage with the learning material during the class (Kim et al., 2014). Teachers have a number of activities available to choose from. For example, there is in class discussion, presentations, and games. Think-pair-share and small group discussion are two examples of sense-making activities.

### **Think-pair-share**

Broadly, in this activity, teachers pose a question(s) and allow learners time to think of an answer. Next, learners pair off to discuss the question posed. Last, learners are encouraged to share their answer(s) with other learners (Kim et al., 2014). In this activity, teachers pose a question(s) related to the learning objective(s) to the learners. The teacher then provides the learners with a period of time to think of their answer to the question. In this time period, learners are invited to reflect on pre-class and in-class activities to formulate their answer. Upon completion of the pre-determined time, the teacher may assign or invite learners to self-choose another learner to pair together and share and discuss their answer to the question posed. More time is provided for this. In share, learners present their answer(s) to the teacher and other learners. This can be done formally in the front of the class or from their seats in the classroom.

### **Small group discussion**

Broadly, this activity is an extension to think-pair-share. In this format, small groups are developed and a class objective(s) to discuss is provided. Learners are encouraged to have open discussion(s) in their groups (Kim et al., 2014). In practice, teachers assign or invite learners to self-choose small groups (3-4 or 5-6 learners) depending on class size. Next, as in think-pair-share, teachers pose a question(s) related to the course syllabus and learning objective(s) to group of learners. Similarly, the teacher provides the groups with a period of time to discuss the question(s) using pre-class and in-class activities. At the end of the time, teachers can invite the groups to present formally in front of the class or informally from their group in the classroom.

Overall, an advantage to think-pair-share and small group discussion is that they support collaboration, cooperation, and communication amongst learners. Furthermore, they can be used at the beginning of class to assess completion of pre-class activities and during class to assess understanding of content. From the learner's perspective, these activities may enable them to stay current with course content and solidify learning. Last, learners may benefit from discussion with other learners, and feel more engaged through the class activities. From the teacher's perspective, these activities allow for the supervision of the learners and the ability to evaluate whether the learners are engaging with and understanding the material (Kim et al., 2014).

### **Open lines of communication**

This aspect ensures that learners can communicate without barriers with teachers. This can be achieved through in-person conversations or email. In this aspect, teachers need to be available during and after class to answer learners' questions (Kim et al., 2014). However, open lines of communication should not be limited to in person conversations and emails. It should transcend these boundaries and incorporate different social media platforms (Facebook and Twitter) to pose and answer questions. For example, teachers can have a Facebook or Twitter course page or account where learners can post and receive answers to their questions. This would allow learners to be engaged in the course material.

Disadvantages to think-pair-share and small group discussion relate to the time consumption required, taking away important in-class time in which teachers and learners could be engaging with the content. Last, it may present difficulties for teachers to assess true completion of pre-class activities and in-class understanding if one or more learner(s) is dominant in the pair or small group activity.

### **Advantages and Disadvantages to Flipping the Classroom**

There are many advantages to flipping the classroom. Through the use of various technological mediums learners not only have the flexibility to engage with the information before entering the classroom, they can revisit the content from anywhere at any time. Flipping the classroom also fosters individual inquiry, collaborative effort, and social skills (Bergmann & Sams, 2012).

With advantages, there are disadvantages. First, clarity needs to be provided on the cost implications of providing USB stick to each learner. In addition the availability of technological platforms to all learners has to be ensured. As discussed in well-designed sense-making activities, flipping the classroom requires time as it takes detailed planning (Reyna, 2015). Perhaps, the most significant disadvantage to the flipped classroom is that research into this approach is limited and insufficient evaluation and theory are available at present (Abeysekera & Dawson, 2015). As such, more in-depth research is needed into flipping the classroom, including research aimed specifically

at clarifying its definition, thus reducing confusion. As well, research is needed assessing and evaluating the tools used to measure pre-class and in-class learning when using various technological media in teaching and learning. Last, research needs to be done to assess the validity, reliability and practicality of well-designed sense-making activities, including think-pair-share, small group discussions, and others, along with research into the practicality and implications of teachers and learners communicating over social media platforms.

## Conclusion

Flipping the classroom has an emerging and evolving position in teaching and learning. This article has provided a definition of flipping the classroom, identifying potential confusion amongst teachers and learners. As well, this article has identified a core tenet common to all definitions: in the flipped classroom, learners conduct pre-class reading in advance of the class. As seen throughout, the technique of flipping the classroom is already in use in various disciplines with demonstrated positive influence on learning, in keeping with theoretical frameworks such as constructivist and experiential learning. While a strong foundation is necessary to ensuring success of the flipped classroom, novel theoretical teaching and learning tool is introduced. Specifically, the USB in providing learners with a course syllabus, lecture notes, and required readings. Last, advantages and disadvantages were discussed from the learners' and teachers' perspective.

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