

Investigating the effect of the flipped classroom on student attainment and self-...



**ASSIGN
BUSTER**

Introduction

The access Millennials have to technology, information and digital media has become the driving factor behind the sense of urgency to change learning environments around the world. With technology playing such an important role in everyday life it is undoubtedly reshaping the way the world communicates. As technical evolutions occur, educational atmospheres maintain progress (Sommer & Ritzhaupt, 2018). The work of Bergmann and Sams (2007) was particularly progressive. Their studies pioneered flipped learning as a method of teaching. Extensive technological advancements offer educational innovations as a means of enhancing teaching approaches, delivery of the learning experience and competence development. Efforts to understand the purpose for learning environments were caused as a result of societal shifts in expectations forcing the education system to find ways of adapting. Huang and Chiu (2015) found that the learning environment structure and pedagogical strategy greatly increased student achievement. The overall effectiveness of teaching methods has been questioned for decades by educators. Despite innovations in technology enabling the assessment of student retention by means of evolving methodologies and advance innovative techniques conveying development of educational aids (Roehl, 2013).

The Flipped Classroom Model (FCM) has attracted an overwhelming amount of consideration from both practitioners and scholars (O'Flaherty & Phillips, 2015). Flipped Classroom approach delivers an adaptable educational nature allowing learners to engage in a cooperative and dynamic surrounding as they are able to access the course content from anywhere at any time.

<https://assignbuster.com/investigating-the-effect-of-the-flipped-classroom-on-student-attainment-and-self-efficacy-in-cte/>

Although its numerous advantages and potential, implementing the flipped classroom method as the latest instructional method is among reservations indicated in the literature as a result in the lack of experience creating unforeseen challenges indicating more time would be required to redesign the course to account for these possibilities. The objective of this report involves discussion into the overall effectiveness of the flipped classroom model on learner achievement and self-efficacy related to the traditional teacher-centered instruction teaching method in an introductory computer course.

Review of the Literature

The Flipped Classroom Model aims to enable educators to integrate both face-to-face sessions via group discussions, decrease teacher lectures, and allow distance learning that includes watching asynchronous video lessons increasing students active learning, collaboration and framework. A flipped classroom focuses on educator guidance while keeping student learning at the center of instruction. Years of research have established that there are various types of amount of Flipped Learning practices associated with increased academic achievement and learning self-efficacy.

The concept of self-efficacy is central to Albery Bandura's social cognitive theory, which emphasizes the role of observational learning, social experience and reciprocal determinism in developing a personality. Research indicates self-efficacy to be one of the most important factors affecting student performance (Arslan, 2013). Data produce from research studies showed results that demonstrated a direct positive correlation between self-efficacy and academic achievement (Klomegah, 2007: Richardson, Abraham <https://assignbuster.com/investigating-the-effect-of-the-flipped-classroom-on-student-attainment-and-self-efficacy-in-cte/>

& Bond, 2012). According to Bandura (1986), self-efficacy is a person's confidence in their abilities to complete a certain task successfully.

According to Bishop and Verleger (2013), student-centered learning embodies a set of theories that include active learning, peer-assisted learning, and collaborative learning. Active learning can be defined as "any instructional method that engages students in the learning process" (Prince, 2004, p. 223). Peer-assisted learning is "the acquisition of knowledge and skills through active helping and supporting among status equals or matched companions" (Topping & Ehly, 1998, p. 1). Collaborative learning broadly "is a situation in which learners interact in a collaborative way" (Dillenbourg, 1999, p. 8).

Team-based learning goes beyond the flipped classroom by including structured learning activities (Michaelsen and Sweet, 2008; Wallace et al., 2014) is novel and give both students and educators insights into learning processes required for effective pre-learning for active engagement in student-centered classes. This approach would advocate to implement an introductory class session that prepares and engages students to be successful participants in courses requiring pre-learning. To add value to their services schools have sought to use teaching strategies focusing on the function needs of students. In practice, educators prepare materials for their students in the form of recordings or documents or use selected public content on internet web sites such as TED-Ed or Khan Academy.

Problems | Challenges with the Flipped Classroom

The latest technological advances and accessibility to use them, have forced our education system to create, design, and develop new strategies and teaching methods to replace the traditional approaches that have been around for decades. Some examples of technical and technological challenges presented include access to the necessary technology required to succeed, poor quality of video lectures, unreasonable length of video lectures, increased teacher workload to pre-record lectures and prepare materials. In particular, librarians will need to be heavily involved to create supporting materials (such as ensuring the school internet permits particular websites, allowing students to utilize the library computers to complete work, determining if specific web browsers with proper plug-ins are required to watch material and creating white pages for students to access with guided instructions, etc.), prepare to be able to accommodate specific aspects of the class assignments to determine what technology device can support it, constantly learn and stay up to date with new technology and be able to guide students applying knowledge.

The theoretical framework for the problem and is proven as a foundation for reviewing the literature on the flipped classroom model and the following principles (a) broad-spectrum explanation of blended learning (b) benefits / opportunities provided to students and teachers (c) advantages of implementation and (d) diverse avenues, educational levels, and various subject areas.

Impact of Implementing Flipped Classroom

Student populations are changing everyday due to factors beyond our reach.

As a result, there

have been documented Flipped Classroom implementations that have different effects in different stages

of the course. An effective and logical solution would be to implement the “pre-course” so students can

avoid any challenges presented and be able to take solace in increasing their readiness level through

teaching methods that are designed activities to develop a positive learning culture where students

understand their obligations regarding pre-learning and are prepared for engagement in the course. This is

also a valuable way for the instructor to gain information for understanding the learning motivations,

expectations and perceptions of student learners to allow teaching approached to be tailed to the needs of

the class.

In the midst of the constant struggle to engage students and find ways of connecting to them, educators look to creative minded researchers who have already explored strategies, conclusions and suggestions. With the increase in blended learning options, researchers sought to determine which

<https://assignbuster.com/investigating-the-effect-of-the-flipped-classroom-on-student-attainment-and-self-efficacy-in-cte/>

factors most influenced student achievement in the blended learning environment (Baeten et al., 2010; De George-Walker & Keeffe, 2010; Donnelley, 2010; Lopez-Perez et al., 2011; Nie & Lau, 2010; Ning & Downing, 2012; Taylor & Parsons, 2011). Level of achievement in education is typically measured by assessment scores (Rastegar et al., 2010).

One researcher found that the retention levels of students increased as a result of implementing the Flipped Classroom Model. The flipped classroom experience promotes retention and accountability for learning because of the learning materials used within appeal to many sensory organs and this can be effective in ensuing more permanent learning. The more sensory organs the learning environment appeals to, the more permanent the learning is (Nalçacı & Ercoşkun, 2005; Yalın, 2006). Additionally, a study by Boyraz (2014) and another similar study by Kim et al. (2014) concluded that the flipped classroom had a positive effect on academic achievement and retention.

In the traditional teacher-centered model, the teacher is the primary source of information. By contrast, the Flipped Learning model deliberately shifts instruction to a learner-centered approach, where in-class time is dedicated to exploring topics in greater depth and creating rich learning opportunities. As a result, students are actively involved in knowledge construction as they participate in and evaluate their learning in a manner that is personally meaningful (The Flipped Learning Network, 2014). There has been extensive work that implies that the flipped model yields positive academic achievement of Student Learning Outcomes (SLOs) in CTE. According to our reviewed studies, the flipped model also enhances student satisfaction, <https://assignbuster.com/investigating-the-effect-of-the-flipped-classroom-on-student-attainment-and-self-efficacy-in-cte/>

improved learning performance, more effective engagement, enhances confidence, promotes creativity, increases problem-solving skills and promote a high level of student satisfaction.

Flipped Learning Educators continually think about how they can use the Flipped Learning model to help students develop conceptual understanding, as well as procedural fluency. They determine what they need to teach and what materials students should explore on their own. Educators use Intentional Content to maximize classroom time in order to adopt methods of student-centered, active learning strategies, depending on grade level and subject matter.

The role of a Professional Educator is even more important, and often more demanding, in a Flipped Classroom than in a traditional one. During class time, they continually observe their students, providing them with feedback relevant in the moment, and assessing their work. Professional Educators are reflective in their practice, connect with each other to improve their instruction, accept constructive criticism, and tolerate controlled chaos in their classrooms. While Professional Educators take on less visibly prominent roles in a flipped classroom, they remain the essential ingredient that enables Flipped Learning to occur.

This research studies the effects of the flipped classroom model on a computer class and student achievement. Technology courses, such as the Introductory to Computer course are constructed upon the basis of a student's prior knowledge. The Introductory course is Computer Skills and Applications which covers Digital Literacy and Keyboarding and Basic Word

<https://assignbuster.com/investigating-the-effect-of-the-flipped-classroom-on-student-attainment-and-self-efficacy-in-cte/>

Processing and is a prerequisite for other Information Technology Education Electives. It is imperative that student's mastery this prerequisite course prior to moving on to Advanced Computer Skills and Applications. Students must retain an master understanding of basic computer skills such as ability to understand and apply the touch method in operating the alpha keys, understand and apply the touch method in operating number and symbol keys, understand and apply the touch method in operating the keyboard while increasing speed and accuracy, understand formatting skills in document processing and mastery of digital literacy. Failure to accomplish this, could result in the inability to advance to the next computer course.

The theoretical basis for the present work draws from Blooms Taxonomy. This model uses different domains of comprehension beginning with simple retention of specifics to the ability to apply said knowledge. Bloom considers the three areas of learning: cognitive, affective and psychomotor. Then these areas are separated further as cognitive domains broken into six categorized levels: knowledge, comprehension, application, analysis, synthesis and evaluation. The application of this revised model to The Flipped Classroom Method considers lower levels of critical thinking that include applying, understanding and remembering which is where outside of class students are introduced to new material and are allowed to take their time, work at their own pace and master concepts. The higher levels correspond to creative and abstract thoughts that include creating, evaluating and analyzing which are focused on in class, where student and instructors work together on these types of learning. Comparatively the traditional approach's critical thinking occurs in class as instructors introduce new material to

students who must attempt to follow the teachers chosen instructional delivery method. The creative and abstract thoughts are carried out at home where students are responsible for homework given on a higher level of cognitive thinking.

Method

The majority of these research articles

Analysis

The Flipped Classroom Model's main priority resides in utilizing technology to make class time most effective (Bergmann and Sams, 2013). The research suggests the incorporation of technology tools provided added value to education and promoted differentiated instructional methods. This type of differentiation strategy has the potential to enhance the learning, engage in hands-on learning activities, which allowed for the participation in realistic and collaborative learning environments. The Flipped Classroom approach has many potential practices for implementation. As such, it allows students to use cooperative learning activities and problem-solving processes by presenting learning materials to them during extracurricular times. For an approach, that traditionally would be performed within a conventional educational environment the Flipped Classroom Method has the ability to be converted into a more flexible personalized format. There has been a push from educators for years to implement and incorporate active learning environments where there is student-centered learning and constructivist learning approaches that yield successful results. The common notion is to be able to accommodate all students when there is a conflict of

extracurricular activities that hinder traditional education for those.

Additionally, this would eliminate the issues and accommodations that are currently in place for those with learning deficiencies or disabilities that do not allow them or need special accommodations where they cannot fulfill an entire day in the classroom to still prohibit them an environment to maintain their current educational grade level and be able to keep up with any and all work. There are also those students whose personal learning speed is above grade level and since North Carolina has strict rules about skipping grades to find a personalized education plan to fit their needs. Since the flipped classroom provides a flexible learning environment, students are able to perform a more collaborative and active learning by accessing course content anytime and from anywhere. It also provides a change in the learning culture since learning is achieved during activities conducted outside of the classroom and an in-depth learning is provided in activities carried out in the classroom. It facilitates the use of appropriate content in accordance with the objectives and is also effective in sharing multimedia elements with students. It contributes to the development of professional educational skills, since the instructor is always active in the process and will guide students during the learning process, it has an important impact on preparing the content and guidance of the teacher. Students can now access tools such as presentation files, video and, audio recording etc. can be used effectively in these practices (McDonald and Smith, 2013). Lastly, activities such as online evaluation and messaging are also effective tools that can be used frequently in the Flipped Classroom implementations (Hamdan, McKnight, McKnight and Arfstrom (2013). Limitations occurred within the study that fall within a scope of importance. They are as follows: the study <https://assignbuster.com/investigating-the-effect-of-the-flipped-classroom-on-student-attainment-and-self-efficacy-in-cte/>

was conducted in a single semester, the working group was limited to 34 students, and the computer hardware course that was suitable for application was preferred.

Conclusions

The advances that technology has made over the past two decades has made it much easier to teachers to flip the classroom. While, the reputation of FCM continues to grow and the action research reviewed provides promising data regarding the potential of implementing FCM, additional research to explore the effects of implementing are essential. Research to date signifies that FCM has a multitude of advantages, it is important that educators understand the time commitment and costs related to developing and implementing The Flipped Classroom Model. The literature provided in-depth insight on what The Flipped Learning Model is, difference between Flipped Model practices and traditional learning approaches, the theoretical framework, the challenges and limitations associated with implementing the flipped learning model, the advantages of the flipped learning model, and the impacts / effects the flipped model has in regards to academic achievement and student self-efficacy in and Introductory computer class. Despite the challenges that may arise from implementing the flipped classroom model, if used properly and in conjunction with a variety of instructional methods, the flipped classroom can be an invaluable resource. To make the best use of the FCM, educators are provided and opportunity to utilize the significantly more class time to stress important concepts or integrate and involve students in problem-solving strategies. Educators willing to implement and apply this new method, need to periodically reflect and assess their teaching effectiveness.

References

<https://assignbuster.com/investigating-the-effect-of-the-flipped-classroom-on-student-attainment-and-self-efficacy-in-cte/>

- Akçayır, Gökçe, & Akçayır, Murat. (2018). The flipped classroom: A review of its advantages and challenges. *Computers & Education*, 126, 334-345. <https://doi.org/10.1016/j.compedu.2018.07.021>
- Betihavas, V., Bridgman, H., Kornhaber, R., & Cross, M. (2016). The evidence for 'flipping out': A systematic review of the flipped classroom in nursing education. *Nurse Education Today*, 38, 15-21.
- Bishop, J. L., & Verleger, M. A. (2013). The flipped classroom: A survey of the research. Paper presented at the 120th ASEE annual & exposition, Atlanta, USA.
- Boyraz, S. (2014). *Evaluating flipped classroom/education method in English teaching*. (Unpublished Master thesis, Afyon Kocatepe University, Afyon).
- Hamdan, N., McKnight, P., McKnight, K., & Arfstrom, K. M. (2013). The flipped learning model: A white paper based on the literature review titled "A Review of Flipped Learning." Arlington, VA: Flipped Learning Network.
- Flipped Learning Network (FLN). (2014) The Four Pillars of F-L-I-P™
- Fung, F. M. (2015). Using First-Person Perspective Filming Techniques for a Chemistry Laboratory Demonstration To Facilitate a Flipped Pre-Lab. *Journal of Chemical Education* .
- Kim, G. J. Patrick, E. E., Srivastava, R., & Law, M. E. (2014). Perspective on flipping circuits I. *IEEE Transactions on Education*, 57 (3) , 188-192.
- Lai, C.-L., & Hwang, G.-J. (2016). A self-regulated flipped classroom approach to improving students' learning performance in a mathematics course. *Computers & Education*, 100, 126-140.

- McDonald, K., & Smith, C. M. (2013). The flipped classroom for professional development: part I. Benefits and strategies. *The Journal of Continuing Education in Nursing* , 44 (10), 437.
- Nalçacı, A. & Ercoşkun, M. H. (2005). The materials used in primary education social studies lesson. *Journal of Kazim Karabekir Education Faculty*, 11 .
- Sun, J. C.-Y., Wu, Y.-T., & Lee, W.-I. (2017). The effect of the flipped classroom approach to OpenCourseWare instruction on students' self-regulation. *British Journal of Educational Technology*, 48(3), 713-729.