

The Application of Flipped Classroom in Teaching University Students: A Case Study From Vietnam

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ABSTRACT

Flipped classrooms have been extensively used by many educators all over the world and are being seen as an alternative to the traditional classroom-based teaching-learning practices. As for traditional classrooms, face-to-face learning has not brought the personalization of learning capacity, time, attitude, behavior and interests to learners and has not exposed them to experimental activities. The flipped classrooms, on the other hand, enable students to be flexible in their learning and offer more time to go through videos, lectures posted on the Internet, which helps students to acquire the lessons through online learning systems. Flipped classrooms help create environment for more interaction between learners and instructors/facilitators, especially by creating the face-to-face conversations more interactive. However, teaching using flipped classrooms requires adequate additional resources such as; the effective online learning systems, databases, appropriate learning contents and methods, plan, presentations (in various forms like PowerPoint, word, scrom, video, audio) and most importantly minimum technical knowledge for both learners and instructors to use varieties of tools. This paper presents the construction of an environment supporting students to take part in an online activity before and after face-to-face interaction and organization of experimental teaching with the process of learning in groups based on the model of flipped classrooms to facilitate active learning. The quantitative results at the end of the course showed that the flipped learning is highly preferred and useful pedagogical approach when compared to those traditional methods that fostered better learning attitude and behaviors.

KEYWORDS

Blended Learning, Face to Face, Flipped Classroom, Online Learning System

INTRODUCTION

The face of education in the 21st century has witnessed a major paradigm shift, moving away from the traditional classroom based face-to-face teaching environment to a more technology-based learning environment. The traditional classroom-based teaching-learning methods have been practiced ever since the presence of the school education system. They represent the basic and predominant teaching-learning practices carried out by certain units of knowledge called 'lessons' delivered in a classroom

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setting with students as receptors of knowledge and the teacher as the main knowledge provider. It creates conditions for teachers to apply their teaching methods to provide the class with relatively large amount of knowledge in a short time. There are supporting sources from the internet such as forums, social networks, but in traditional classrooms, there is a lack of connection among learners, instant help, personalization and profound experience. With this learning form, it is hard for teachers to apply the methods enabling students to learn actively, creatively and positively and have more experiences. In addition, learners often acquire knowledge passively, so the acquired knowledge does not last long and it is difficult to develop core competences meeting the requirements of the 21st century.

The objective of the research presented in this paper is to assess student engagement with and attitudes towards the use of a flipped classroom teaching approach and associated resources in The University of Danang was carried out with the Unit “PushDown Automata” in the module “Theory of Computation”. The purpose of this paper is to evaluate the effectiveness of flipped classroom approach in improving student engagement and to enhance student learning.

Overview of Flipped Classroom Approach

Literature search shows that there are several strong evidences of learning enhancement using flipped classroom techniques or philosophy. For example, in the middle of the year 2007, Jeremy Strayer announced his study at the university of Ohio with the topic “the impacts of flipped classroom on learning environment: comparing the activities between the traditional and flipped classroom” (Strayer, 2007). In other example; According to Jalal Nouri from Department of Computer and Systems sciences, Stockholm University, Stockholm, Sweden, He announced his journal “The flipped classroom: for active, effective and increased learning – especially for low achievers”. The results revealed that a large majority of the students had a positive attitude towards flipped classroom, the use of video and Moodle, and that a positive attitude towards flipped classroom was strongly correlated to perceptions of increased motivation, engagement, increased learning, and effective learning. according to Gardner (2012) at the university of Tennessee state- America, Students were highly satisfied with this teaching style; Students stated that learning by this format could help them understand the lessons more clearly, however the research did not indicate the relation between students’ awareness and results.

With the rapid use of information technology in higher education sector, the adoption of flipped classrooms (FC) approach has gained momentum. In a typical FC setting, students take ownership of their own learning outside the classroom and the in-class time is effectively used for discussions based on the content they have gone through already (George Mason University, 2014, Wordley, Jones, Taylor & Pearson, 2016). The flipped classes involve students reading books or papers or watching videos to gain basic information in their own time and then gathering in a classroom to apply the knowledge through problem solving activities with guidance from a teacher (Strayer, 2012). In flipped classrooms, the focus is student-centric and it is less about “what the teacher does” but about “what the students do” (Biggs, 1999). Short online quizzes are commonly used to ensure basic comprehension of this pre-class material. This approach has resulted in improved student engagement and learning (Bergmann and Sams, 2012, Bishop and Verleger, 2013, Kim, Kim, Khera, and Getman, 2014).

Increasing amount of scholarly research on the effectiveness of active learning, more specifically its application within a flipped classroom context is indicating significant student preference for this new mode and in some cases improvements in measured learning outcomes also have been observed (Bishop and Verleger, 2013, Scott, Khoo, Peter, and Round, 2016).

Zappe et al. (2009) carried out research on the engineering course at Pennsylvania State University using the model of flipped classrooms, and the feedback showed that the students were satisfied with this model and their learning outcomes were good. In addition, this study at showed that about 48% of

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