Education Quarterly Reviews

Fuchs, Kevin. (2021), A Perspective on the Flipped Learning Pedagogy in Thai Undergraduate Education. In: *Education Quarterly Reviews*, Vol.4, No.3, 127-131.

ISSN 2621-5799

DOI: 10.31014/aior.1993.04.03.324

The online version of this article can be found at:
https://www.asianinstituteofresearch.org/

Published by:
The Asian Institute of Research

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The Asian Institute of Research
Education Quarterly Reviews
Vol.4, No.3, 2021: 127-131
ISSN 2621-5799

DOI: 10.31014/aior.1993.04.03.324

A Perspective on the Flipped Learning Pedagogy in Thai Undergraduate Education

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Abstract
The world is changing at a much faster pace than in the past and has become more connected than ever before. This has led to increasing levels of economic competition and socio-political-cultural transformation. The necessity for Thailand to compete internationally is based on the creation of quality graduates. The rapid changes in Information and Communication Technology (ICT) are transforming the ways people think, live, learn, and interact. These rapid changes have implications in all spheres of national development and higher education learning. For Thailand to remain competitive in an age of global movement and uncertainty, a knowledge-based society, i.e., a society that generates innovations through creativity and shared and utilized knowledge, must be developed. The flipped classroom approach has a recognized record of delivering the active learning pedagogy to the modern classroom. This practitioners' perspective provides further insights into why Thailand's higher education system would benefit from adapting to this innovative active learning pedagogy.

Keywords: Flipped Classroom, Inverted Learning, Higher Education, Thailand, Active Learning

1. Introduction

The scope, quality, and importance of web-based learning in higher education have increased remarkably over the last decade (Fuchs, 2021a). Fuchs (2021a) states that "the trend is largely triggered by new educational technologies and pedagogical approaches" (p. 18). The flipped classroom approach is not a new concept, though it has gained tremendous popularity in recent years. It is noteworthy that the term 'inverted learning' was first mentioned in the literature by Johnson (1923) and Brooks (1924), who conducted psychology experiments with university students, focusing on their reading ability and seeking a possible correlation between reading ability and the students' intelligence. Approximately one hundred years later, we can see an abundance of laboratory notes and research reports that claim different perspectives on the usefulness of inverted learning, or the flipped classroom.

This statement is supported through an inquiry in the abstracting/indexing database Scopus®. The author conducted a TITLE-ABS-KEY search with the syntax ["flipped classroom" or "flipped learning" or "inverted learning" or "inverted classroom"] that yielded 7,944 articles on 20th June 2021. The concept gained more momentum since the early 2010's, which coincides with the amplified use of ICT at the time, and henceforth, ICT serves as a catalyst for the flipped classroom concept as we know it today. Another notable observation is the distribution of the previously mentioned 7,944 publications. While the first research about inverted learning is

mentioned a hundred years ago, approximately half of the publications since then (45%; n=3,585) originated only in the last three years.

2. Flipping Classrooms as Pedagogy

In recent years, there has been a change in the way lectures in higher education are delivered, going from the traditional instructor-based teaching model to active and student-centered learning experiences that generate engagement and contribute to the acquisition of both knowledge and the skills necessary to enter the labor market (Yen, 2020; Lestari, 2021). Under the traditional approach, the main actor in the teaching-learning process is the lecturer, while students play a passive role. The flipped classroom emphasizes the role of the student in the center of the learning environment and facilities an active learning pedagogy (Gelgoot, Bulakowski, & Worrell, 2020; Lestari, 2021; Fuchs, 2021a) as seen in the exemplary model below (Figure 1).

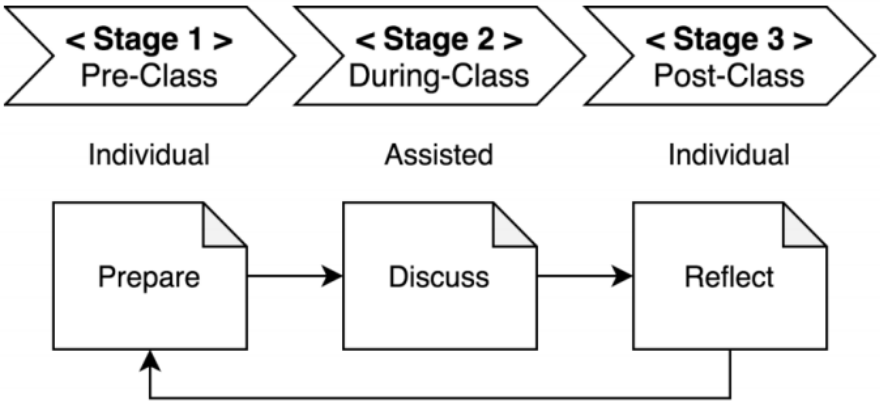

Figure 1: The three-staged conceptual model of a flipped classroom (adopted from Fuchs, 2021b)

To reiterate, the flipped learning concept is gaining popularity and the model redesigns the usual classroom paradigm in that students learn initial course concepts outside the classroom, while class time is used for active problem-based learning and practice activities (Lestari, 2021). The flipped classroom has been viewed as an active learning methodology that encourages higher-order thinking and active participation by students. Furthermore, it involves the flexibility of teaching spaces, taking advantage of the multiple possibilities offered by technology and interaction (Yen, 2020). The flipped classroom approach utilizes blended methods, whereby virtual resources, such as videos or reading content (i.e., online articles or e-book chapters), are used to transmit knowledge, and face-to-face classes are used to consolidate knowledge through interactive activities, such as problem-solving, role-playing games, discussions, and collaborative work dynamics (Gelgoot, Bulakowski, & Worrell, 2020; Yen, 2020).

3. Undergraduate Education in Thailand

At present, Thailand's university system essentially follows the model and principles of most developed Western economies in a three-tiered system (e.g., undergraduate degrees, graduate degrees, and postgraduate degrees). Unless the student is pursuing a specialized profession, most undergraduate degrees are taught as four-year, full-time programs (Schiller & Liefner, 2007; Bovonsiri, Uampuang, & Fry, 2018). Following the trend of higher education reformation in the 1990s, there was a gradual shift toward private higher education in Thailand. At the same time, Thailand saw rapid growth in the number of private higher education programs (Yousapronpaiboon, 2014). Yousapronpaiboon (2014) adds that the number of private higher education institutions has continued to rise since the beginning of the 21st century.

Thailand has over 170 institutions of higher education, both public and private, offering 4,100 curricula (Kew et al., 2018). Kew et al. (2018) add that many public universities receive financial support from the government for

research purposes. The majority of the provinces have government-run Rajabhat Universities, which were traditionally teacher-training colleges (Watson, 2018). Another characteristic of Thai universities is that they do not score highly in the Quacquarelli Symonds (QS) World University rankings and are continuously losing ground as compared to other Asian universities (Top Universities, n.d.). For example, Thailand's top three universities—Chulalongkorn, Mahidol, and Thammasat—have been trending down since 2016 (Top Universities, n.d.). However, Thailand is known for producing quality graduate students in the fields of medicine, science, and technical engineering (Watson, 2018).

4. Thoughts on Flipped Learning in Thailand

Students in Thailand regularly complain about excessive homework, while teachers criticize the time pressure and difficulty in teaching inactive students. The flipped classroom approach is an attempt to mitigate these issues (Santikarn & Wichadee, 2018). Santikarn and Wichadee (2018) further state that "the flipped classroom can motivate and engage students in activities" It can also enhance the students' active learning through this new pedagogy (Santikarn & Wichadee, 2018). This model categorizes the learning experience in a variety of settings both inside and outside the classroom. Despite the limited amount of relevant research in Thai higher education related to the flipped classroom, the conducted studies (Maneeratana et al., 2016; Santikarn & Wichadee, 2018; Pattanaphanchai, 2019; Srisuwan & Panjaburee, 2020) revealed positive outcomes in terms of the behaviors and outlooks of students learning using the flipped classroom method.

For example, Pattanaphanchai (2019) conducted a comparative research project in Thailand to evaluate the impact on students' learning based on the traditional versus flipped learning approach. The study includes e-learning, traditional learning, blended learning, and flipped learning. It revealed that the flipped learning approach yielded the best results amongst the Thai students concerning student assessment and reaching the course's learning objectives (Pattanaphanchai, 2019). However, Pattanaphanchai (2019) adds that "in Thailand, merely a few studies have been conveyed regarding students who encountered flipped learning approaches during their higher level and university level education."

A case study by Srisuwan and Panjaburee (2020) aimed to develop information literacy for undergraduate students at a university in Thailand and to assist with flipped classroom implementation, using both traditional and customized ubiquitous educational models. Their database recorded the profiles of students while also offering them exam papers and registering their answers to access performance reports. This helps elevate the performances of students in an in-class learning system, where they can participate in active exercises, discussions, gaming activities, and teamwork. The study revealed that students could utilize flipped learning when it is combined with customized ubiquitous learning schemes. These approaches help them enhance their learning performances and develop their information literacy. Moreover, the teachers reported improved motivation, test scores, and self-efficacy among students (Srisuwan & Panjaburee, 2020).

Turan and Göktaş (2018) investigated how students' motivation is impacted by the flipped-classroom approach, using a preliminary computer course. During the first session, a group of students was educated using the traditional lecture-related approach. Another session was conducted in which a group of students learned the same module using an experimental flipped-classroom method. In the latter scenario, the students were allowed to watch the practical implementation of the module in a video before attending the class. The study showed that the students who were in the flipped-classroom learning system showed more motivation to learn compared to traditional ones. Through game-based approaches, teamwork, and practical activities, the motivation of students increased significantly (Turan & Göktaş, 2018).

In engineering education groups, flipped classroom systems have become enormously popular in recent years (Mason, Shuman, & Cook, 2013). The teaching method enhanced academic performance, while the number of student dropouts reduced with the involvement of flipped learning models among the students in the Mechanical Engineering Department (Maneeratana et al., 2014). Online resources and the Learning Management System (LMS) helped undergraduate students regularly rank in the top three Courseville LMS activities (Temiyasathit,

Punyabukkana, & Suchato, 2016). Flipped classrooms, especially in the Mechanical Engineering Department, helped enhance the management and conducting of courses, as well as the academic performance of the participants (Maneeratana, Singhanart, & Singhatanadgid, 2016). The benefits of flipped classroom implementation at Thai universities are: enhanced self-efficacy in independent education, improved participation in learning, increased amounts of self-paced learning, and higher grades in general (Gilboy, Heinerichs, & Pazzaglia, 2015).

5. Conclusion

The literature contains a vast amount of evidence about the merits and shortcomings of inverted learning, and flipped classroom pedagogy in particular. While the flipped classroom method is not free of shortcomings, it arguably offers educators an alternative method for engaging and motivating students. Evidence indicates that the innovative approach works in Thailand, but the unanswered question is: Why is this approach not being used more frequently by educators in Thailand's higher education systems, or at least why does the literature lack the corresponding evidence?

Acknowledgements

The author would like to declare no potential conflicts of interest concerning the research, authorship, or publication of this article. Moreover, no funding was received for this article. Any conclusions expressed in this paper are solely the intellectual result of the author and do not reflect the viewpoint of the Faculty or University.

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