



The Flipped Classroom: An Overview of its Impact on Economics Learning

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ABSTRACT

The flipped classroom is a type of blended learning that has been widely applied at various levels of education, from elementary to higher, but there have been few studies on its use in Economics education. The purpose of this article is to provide a brief overview of the impact and effectiveness of the flipped classroom on Economics learning. The research methodology used is a literature study with analysis of several articles about the flipped classroom, which concludes with the research objectives. The study results show that the effects of the flipped classroom can enhance students' self-reliant and active learning, increase collaboration, and improve learning outcomes. The article provides advice for educators, especially in the field of Economics education, on use of the flipped classroom to maximise student learning. The study conclusion, which compares the flipped classroom learning model in general, shows that the flipped classroom learning model is effective for use in the learning process because students have studied the material before going to class, meaning the teacher no longer dominates the classroom situation and teacher-student interactions become better and more enjoyable.

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1. INTRODUCTION

The development of technology is increasing and becoming valuable in all fields, making it easy to obtain information independently. In education, technological developments can make the learning process easier for teachers and students. According to Namaziandost and Çakmak (2020), the advent of technology and mobile devices have enabled improvements in the quality of learning outcomes. However, technological advances have not been accompanied by optimal use in the realm of education.

For effective learning, teachers must formulate clear learning objectives, choose a suitable learning model, and use exciting learning media. This approach aims to increase student activity and involvement in class and improve learning outcomes. However, in reality teachers have not been able to apply innovative learning models to increase learning effectiveness. Basal (2015) states that teachers must incorporate technology into learning and profit from its benefits in order to achieve learning goals, as technological developments force teachers to integrate and re-evaluate their learning methods.

The teacher as a facilitator must use innovative learning models and technology in the learning process. The use of these helps teachers and students to optimise learning, whilst also making it fun. One learning model that can be used is that of the flipped classroom. This replaces traditional learning and supports information technology in its application. Teaching in the classroom is usually conducted is reversed into the student's task to do it at home. Students work on assignments and confirm what they have learned.

Flipped classroom learning originally appeared in the early 19th century. The United States Military Academy at West Point created a series of learning methods in which students used resources provided by learning before class. In the approach, class time is used to jointly solve problems (Hartyanı et al., 2018; Villalba, Castilla, & Redondo-Duarte, 2018). In 2007, Jonathan Bergmann and Aaron Sams were the first American science teachers to implement the flipped classroom (Hartyanı et al., 2018) by recording their classes for students who were not present. After some time, most students repeated using video while doing homework. This kind of activity was the basis for the flipped classroom learning model (Bergmann & Sams, 2012; Kozikoğlu, 2019). The model has been widely applied in education, from elementary to tertiary levels.

In practice, increasing research on the flipped classroom has examined its effectiveness in learning. According to Hwang, Yin and Chu (2019), by tracing the study of types of articles from SCOPUS, the number of publications on the flipped classroom learning model significantly increased from 2012-2018. The top ten countries in terms of number of studies were the United States (433), China (106), Taiwan (65), Australia (57), South Korea (45), Spain (39), the United Kingdom (35), Turkey (28), Canada (27), and Malaysia (27). Many studies have explored in-depth how the process of the flipped classroom learning model can lead to positive learning. This study examines how the model has a positive impact on education, including the study of Economics.

2. RESEARCH METHOD

The research was conducted based on a literature review as the fundamental approach, which was used as the data collection method. In this technique, the literature related to the theories that needed to be solved was reviewed. The theories used in this study concern the flipped classroom learning model and the nature of students (Pakpahan, 2020). The model in question utilises technology in learning to help students increase their understanding. The characteristics of students, namely their personality, were formulated based on their abilities and activities. The theories will be used as a literature review in the study. The data obtained will be compiled, analysed by identifying relevant theories on the topic studied, then integrated in order to identify conclusions that can be drawn from various studies as research objectives (Ramdhani, Ramdhani, & Amin, 2014).

3. RESULTS AND ANALYSIS

Flipped Classroom Learning Model

The flipped classroom is a form of blended learning (Li, Zhang, & Hu, 2018; Nwosisi., Ferreira, A., Rosenberg, W., & Walsh, I., 2016; Villalba et al., 2018) which relies on the use of technology/electronics (Pavanelli, 2018). Students do their homework in class, while at home they study online learning videos, with the teacher offering more personalised guidance and interaction (Smallhorn, 2017; Van-Alten et al., 2019).

According to Danker (2015), McCallum et al. (2015) and Pavanelli (2018), in the flipped classroom model students are introduced to the concept before class sessions so that during learning activities they are allowed to learn with peers and teachers, meaning that learning in the classroom shifts from traditional delivery; instead, activities such as concept checking, discussion, and debate, and ones involving application, analysis, problem-solving, experimentation and evaluation are performed in class. Therefore, the flipped classroom is a recommended model to overcome the weaknesses of traditional teaching methods (Dong, 2016).

In implementing the flipped classroom learning model, students learn new material through short videos, podcasts, e-books and the internet before class, and integrate what they have learnt through classroom learning activities with the help of teachers and peers (Dong, 2016; Smallhorn, 2017). The flipped classroom encourages students to learn regardless of place and time and they can choose the best learning strategy for them (Uzunboyly and Karagozlu, 2015). It is a feasible learning model to apply to learning (Havwini & Wu, 2019; Van-Alten et al., 2019). The flipped classroom model can create new skills and change students' learning habits (Danker, 2015). Almodaires et al. (2018), Jdaitawi (2019) and Smallhorn (2017) also state that the flipped classroom provides students with the opportunity to earlier prepare learning materials in the form of videos and reading texts, which they can study anytime, anywhere. According to Hwang et al. (2019), this approach uses innovative strategies and technology to facilitate effective learning outcomes.

Basal (2015) states that flipped classrooms can be divided into two learning environments: outside and inside the classroom. The first step for the teacher is to plan in detail what will happen in the two environments. The second is to select various activities that suit the needs of all the students. The following step is to choose a way to consolidate assignments and activities outside and inside the classroom, while the final step is to use an online media-based system as an e-learning platform. In this way, the teacher acts as a facilitator and guide for students to learn through material that has been prepared for the class in advance (Elian and Hamaidi, 2018; Herlindayana, Sahlan, & Alberth 2017; Kozikoğlu, 2019).

Study of the Flipped Classroom Learning Model

Research evidence on the use of flipped classroom learning models exists in teaching and learning in various disciplines, including Mathematics (Bhagat, Chang, & Chang, 2016; Khoirotunnisa & Irhadtanto, 2019; McCallum, et al., 2015); English (Abdullah et al., 2019; Ayçiçek & Yelken, 2018; Basal, 2015; Dong, 2016); Chemistry (Cormier & Voisard, 2017; Munir et al., 2018); Radiology (Afzal & Masroor, 2019); Physics (Aşıksoy & Özdamlı, 2016; Astuti,

et al., 2019); medical education (Bansal et al., 2020; Sezer & Abay, 2019); and Physiology (Rathner & Schier, 2020). The results of the search conducted by Hwang et al. (2019) of the SCOPUS database of studies on flipped classrooms from 2012-2018 revealed the top 10 subjects, as shown in Table 1.

Table 1. Number of flipped classroom studies by subject

NO.	Subject	Number of flipped classroom studies
1	Social Sciences	799
2	Computer Science	198
3	Engineering	188
4	Medicine	132
5	Mathematics	82
6	Arts and Humanities	69
7	Nursing	57
8	Business, Management and Accounting	55
9	Chemistry	53
10	Pharmacy, Toxicology and Pharmaceutics	37

These results show that flipped classrooms can be employed in various disciplines, although most are conducted at the university or college level.

The results of various studies show that the flipped classroom learning model is effective in learning (Lin & Hwang, 2018; Nouri, 2016; Paek & Fulford, 2017) and has been proven to improve student learning outcomes (Angelina, 2020; Ansori & Nafi', 2019; Cormier & Voisard, 2017; Latif et al., 2017; Nguyen, 2017; Qiang, 2018; Rathner & Schier, 2020; Sandhu, Sankey, & Donal, 2019; Sezer & Abay, 2019; Shyr & Chen, 2018; Van-Altan et al., 2019).

Research conducted by Almodaires (2018) at Kuwaiti Primary Education College on 128 students showed that reversed classrooms positively affected learning and were an effective way to create a more active student-centred learning environment. The results of this study are in line with research conducted by Buil-Fabregá et al., (2019), Danker (2015) and Goedhart et al., (2019), that the flipped classroom is a learning strategy that creates active learning. In addition, Kozikoğlu's (2019) research results based on 34 studies in Turkey and 46 in other countries concluded that the flipped classroom learning model made teaching more enjoyable.

Research conducted by Pavanelli (2018) on 22 students at Southern State College in the USA regarding their perception of flipped classrooms showed that 92% liked the flipped classroom model; 62% believed flipped classrooms were better than traditional ones; 70% agreed that it was easy to understand the material in a flipped classroom approach; 92% liked watching lessons on video; 77% agreed that video lessons helped understand the topics being studied, give students more time to practise and work on problems with friends, thus providing more significant opportunities for communicating with peers and teachers; 85% agreed that the flipped classroom model was a fun learning model; and 77% stated that the flipped classroom motivated them to learn more. These findings are supported by several studies that have proven that flipped classrooms are more attractive than traditional ones (Goedhart et al., 2019; Hawwini & Wu, 2019; Herlindayana et al., 2017; Li et al., 2018; Paek & Fulford, 2017; Tomas et al., 2019); can motivate students to learn (Chung & Lee, 2018; Nouri, 2016; Su & Chen, 2018); and can help students to understand the concept of learning well (Nwosisi et al., 2016).

Herlindayana et al. (2017) conducted their study at a high school, showing that 75% of students agreed that the flipped classroom learning model could improve independent learning. This finding is in line with the argument of Danker (2015); Kozikoğlu (2019) explains that in flipped classroom learning students are required to take the initiative and be responsible for their knowledge independently before attending class. Compared to traditional learning methods, flipped classrooms change the roles of teachers and students, together with learning strategies, time distribution, learning content, implementation of learning methods, and evaluation in teaching activities (Deng, 2019).

Using Flipped Classrooms

Advantages of the flipped classroom

Based on the research results described above, educators need to implement flipped classrooms to implement learning activities. According to Nederveld and Berge (2015), the flipped classroom learning model has many obvious benefits. Students can learn at their own pace, making it easier for teachers to guide their learning. According to Fauzan and Ngabut (2018), the flipped classroom learning model provides opportunities for students to adjust their learning when not in class. They can further explore the learning material they have learned at home. In addition, Almodaires et al. (2018) state that students can also pause, stop and replay learning videos to improve their understanding of the learning material.

Some of the advantages that will be obtained in learning by implementing the flipped classroom include the fact that students can prepare themselves well before learning in class (Almodaires et al., 2018; Ayçiçek & Yelken, 2018; Danker, 2015; Musdi, Agustyani, & Tasman, 2019); learning becomes fun and productive (Enfield, 2013; Kozikoğlu, 2019); teachers can provide guidance and teamwork to students (Nwosisi et al., 2016); students can be motivated by creating a competitive atmosphere in the classroom (Bergmann & Sams, 2012; Dong, 2016; Su & Chen, 2018); the flipped classroom learning model uses technology, thus supporting students in learning independently (Astuti et al., 2019; Enfield, 2013; Herlindayana et al., 2017; Kozikoğlu, 2019; Shyr & Chen, 2018); and that students' success in learning is improved (Cheng, Ritzhaupt, & Antonenko, 2019; Cormier & Voisard, 2017; Rathner & Schier, 2020).

Flipped classrooms also make students more active in class (Basal, 2015; Herlindayana et al., 2017; Kozikoğlu, 2019); increase student attendance (Goedhart et al., 2019; Karabulut-Ilgu, Jaramillo-Cherrez, & Jahren, 2018); increase student involvement in learning activities (Lin & Hwang, 2018; Pavanelli, 2018; Smallhorn, 2017; Su & Chen, 2018); create great potential for making good use of time (Béres & Kis, 2018; Dong, 2016; Havwini & Wu, 2019; Karabulut-Ilgu et al., 2018; Låg & Sæle, 2019); create a flexible learning environment through instructional videos given out by the teacher before class (Luo, O'Steen, & Brown, 2020); and provide opportunities for students to be able to play back learning videos and access material at any time and in any place (Nederveld & Berge, 2015; Nouri, 2016). Students only need to commit to learning (Karabulut-Ilgu et al., 2018).

In the traditional model, students may walk into the classroom confused about some homework problem they encountered the night before. For the first 25 minutes, the teacher will warm the class up and discuss the issues the students have not understood, then deliver new material for 30-45 minutes. However, in the flipped classroom learning model, students ask the contents they have, then answer students' questions for a few minutes. The remaining time is spent on hands-on practice with more extensive activities (Bergmann & Sams, 2012).

Flipped Classroom Steps

According to Herlindayana et al. (2017) and Nwosisi et al. (2016), the process of implementing the flipped classroom learning model involves the following steps. 1) The educators first select the learning materials; 2) they then design video through video, audio, and reading material, and provide these to students before learning takes place in class; at home, students watch videos, study materials, and listen to audio learning assigned by the educator; 3) in the classroom, students are actively involved in collaborative learning, which can be done in pairs or groups to encourage students to participate, with the educators acting as facilitators and encouraging students to control their own activities in learning; and finally, 4) at the end of the learning, students work on assignments related to the learning material, which are evaluated by the educators to ensure that the learning objectives are achieved. According to Abdullah et al. (2019), technological tools used in implementing flipped classrooms include social media websites, educational games, YouTube, TED talks, iTunes University, and other educational websites.

Cormier and Voisard (2017) propose three components of the flipped classroom learning model: 1) pre-class instructional videos which students are asked to watch; 2) in-class questions, exercises, and portfolios, a stage at which the teacher and students are involved in active learning, with the provision of exercises or problems which are solved together; and 3) post-class consolidation exercises. According to Baharum et al. (2020), the steps for the flipped classroom learning model are: 1) before learning the following week, the teacher will introduce the syllabus and the flipped classroom learning model; 2) learning objectives will be set; 3) outside the classroom, students read books/e-books and take part in quizzes anywhere and at any time; 4) in the

classroom, the teacher discusses material that the students do not understand; 5) after related discussion, interactive learning activities are also undertaken during class hours; and 6) after completing the learning activities both in and outside the classroom, students are guided in making evaluations in a self-regulated monitoring system. The flow is shown in Figure 1.

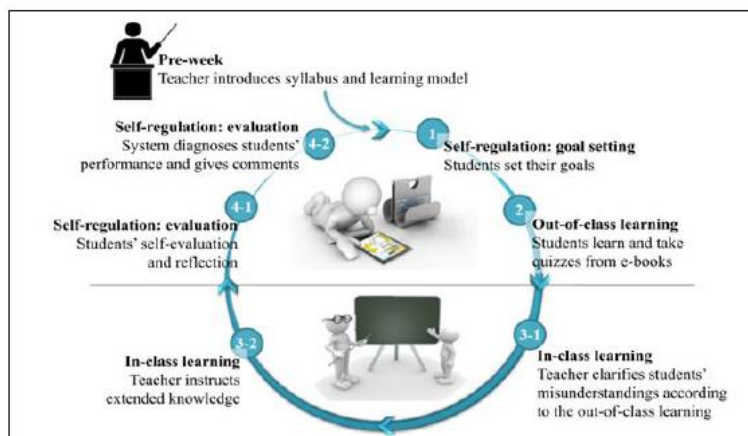


Fig 1. Learning flow of flipped classroom

Source: Baharum et al. (2020)

In the learning process, teachers can modify the flipped classroom learning according to the specified material. The essence of implementing a learning model depends not only on technology, but also on how to handle various types of learning, particularly how educators can improve the understanding of participants and students (Nederveld & Berge, 2015).

Challenges in the Flipped Classroom

Several challenges may occur in the flipped classroom for teachers and students.

For teachers. The challenge for teachers is the heavy workload before and during the class, and online material that is not interesting. Teachers must learn new skills and need to consider that flipped classrooms do not have to reverse the role of students 100 percent of the time. An educator must be wise and know when to use the flipped classroom model (Herlindayana et al., 2017). Therefore, the model requires professional teachers, who must be more critical when observing the learning environment, because in flipped classrooms teachers give lectures to convey knowledge, support students by providing them with feedback, and explore their ideas about knowledge (Nederveld & Berge, 2015).

Technical problems could affect students' learning of the material (Karabulut-Ilgü et al., 2018). Such issues could be in the form of inadequate internet access, which is particularly a problem in developing countries or rural areas where internet access is less developed. Teachers need to consider that the instructional videos used do not need to be of high quality and the duration should be around 5- 10 minutes (Abdullah et al., 2019). The teacher must review the learning video before it is given to students and ensure that most of them have sufficient knowledge of the learning material (Danker, 2015).

For students. Students may feel overwhelmed when faced with new approaches that require them to actively participate in learning (Karabulut-Ilgü et al., 2018). Besides, there is the possibility that students attend class without preparation (Nederveld & Berge, 2015), although the flipped classroom requires commitment and responsibility in terms of independent learning before class (Fauzan & Ngabut, 2018). According to Almodaires et al. (2018), for students the flipped classroom requires more time to watch videos, because they feel that even though the teacher will guide them in the classroom, they also need teacher guidance when they watch the learning video.

The Impact of the Flipped Classroom Model on Economics Learning

Economics is the study of individual and community behaviour in making choices over the use of scarce resources (with and without money) to improve their quality of life (Rahardja & Manurung, 2008). The economy is inherent in humans; its attachment to people can be identified in their daily routine activities, especially in

fulfilling their needs (Musdinar, Wahyono, & Haryono, 2016). The characteristics of learning Economics include (1) identifying problems; (2) choosing problems for classroom learning; and (3) collecting problems to be studied. The flipped classroom learning model provides opportunities for students to adapt their own learning when not in the classroom. This can be said as one of the principles of independent learning. In addition, students can find and enrich learning materials that have been studied at home so that they can improve the learning experience, such as individual assignments, teamwork and presentations. By applying the flipped classroom, students are encouraged to learn on the spot and can also choose the best learning strategy according to their abilities. Students are often faced with various problems in learning about Economics because of the large number of materials and concepts that they must memorise. Therefore, in the learning process, students must have more time to understand the materials so that they can build their comprehension and be involved in the process, which can be facilitated by using the flipped classroom model.

This model provides an economical learning that can be used as a new atmosphere for students to learn, students can manage their own learning, although this requires commitment and responsibility for student learning. This is closely related to rapid and far-reaching economic changes and your environment. However, there are several challenges faced by teachers, namely heavy workloads before learning and diving, uninteresting online materials or content, problems of inadequate Internet access will affect students in learning the learning materials. Therefore, the teacher must be able to create interesting video learning content and must review the learning video before entering the class and ensure that the majority of students can understand the learning material.

The benefit of the flipped classroom model is that it allows teachers to allocate more time to active learning and instructional videos are provided before learning in class. The impact of the flipped classroom model on Economics education is that it can make learning fun and active. Furthermore, the learning model enables the teacher to distribute videos first and in the text before class so that students can prepare themselves to study the material and learn at their own pace with unlimited time before attending class, which encourages independent learning. Students and teachers take part in active learning in the classroom, such as discussion, debate, analysis, problem-solving, and evaluation. The findings of Caviglia-Harris (2016) demonstrate that the flipped classroom model positively impacts student learning outcomes in Economics learning. It can therefore be concluded that using the flipped classroom model in Economics education can foster student learning independence, increase student activity and student involvement, and improve student learning outcomes.

4. CONCLUSION

Flipped classrooms have many advantages and are worthy of being applied by educators in learning, including Economics education. They create student-centred classrooms and support the use of technology. Many studies have examined flipped classrooms in various disciplines. The various studies described above show that the flipped classroom learning model is effective and positively affects learning. Such a classroom is helpful for students, improving their learning independence, which will make it easier for them to understand the learning material provided by the teacher and in the classroom they will become more confident in learning activities. This consequently becomes active learning and student collaboration with teachers increases.

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