



## The flipped classroom: Its effectiveness & impact on the learners in Asian schools and institutes

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### Abstract

The concept of flipped classroom originated from America in the year 2000 pioneered by two American teachers John Bergmann and Aaron Sams. Ever since the emergence of the flipped classroom concept, it has been proven effective for the teaching-learning process. This research report was carried out to see the overall impact of the flipped classroom, especially in Asian countries. There is research carried out by several researchers in different countries and particularly in China. China has been doing well in the flipped classroom in different fields from the teaching of the piano to computer application and business management. The research was carried out using different sources (journals) online and underlined some of the limitations of the flipped classroom as well.

**Keywords:** The flipped classroom, inverted, reversed, hybrid, ICT, active learning, independent learning, online-face-to face

### Introduction

Flip classroom, which is commonly known as “inverted” or “reverse” is the revolutionary concept emerged in 2000. This concept facilitates interaction among students and their teachers. It leads to better learning, focuses on a mixed mode of learning i.e online and face-to-face. Flipped classroom enables students to learn independently and effectively, which ultimately acquires skills, knowledge, and show a good attitude towards learning. In this system, online tools, ICT and various means are inevitably used to make teaching-learning interactive. It is the conversion of passive learning into active learning with responsibilities from both the ends. The research across the world show that flipped classroom contributed positively towards active, and, independent learning. This also enhances teamwork, peer-evaluation and greater motivation. The research shows that academic learning score has improved after the application of flipped classroom.

### Literature Review

The concept of flipped classroom originated from America in the year 2000, which is referred to as “inverted classroom”. It is also known as “reversed classroom” (Zhao & Zhang, 2019; Xu, 2019) [24, 23]; “Flipped Class Model” (Wang, 2018) [22]; hybrid courses (Nwosisi et al., 2016) [18]. The concept of flipped classroom was the transformation of the teaching methods, pioneered by two American teachers John Bergmann and Aaron Sams (Zhang et al., 2016). It is an instructional strategy that reverses the traditional learning environment by arranging instructional content, online, outside of the classroom (Zhang et al., 2016); transformation from passive learning to active learning (Hu et al., 2019).

This allows the students the autonomy of learning by themselves through proper channel of instruction by the teacher. This explores the learning ability of the different students through the use of videos, materials, instructions through the use of ICT and the students learn at home and discuss at school classroom. The students choose the learning contents, time and learning style according to their

actual situations which gives them independent learning with proper guidance from the teachers (Liu, 2017) [11]. In this strategy, students complete the knowledge transfer stage independently and collaboratively (Wang, 2018) [22]. The flipped classroom applies from primary schools to universities (Ma et al., 2019). These kinds of opportunities are not provided in the conventional way of teaching. Flipped classroom enables the teachers to play a fundamental role in guiding students to display information, interpretation of information and it leads the students to think independently (Dong, 2016) [5]. Over the past few years, school education standards have stressed the potential value of student-centred learning where students actively engaged in higher-order activities and taking charge of their learning (Hannafin, Hill, & Land, 1997; Shea et al., 2012) as cited in (Mohanty and Parida, 2016). It allows the students to apply more active learning strategies, group discussions, problem-solving, self and peer evaluation. “This method emphasizes students’ active participation, motivating them to seek knowledge, teamwork, and collaboration during the task resolution” (Neto et al., 2018). The practice of flipped learning also emerged to have increased the students’ enjoyment of their learning, proving greater engagement and participation (Almodaires et al. (2019).

The main principle of this flipped classroom is to share learning responsibility and ownership of learning between learners and instructors (Abdelaziz, 2014). The flipped classroom approach is student-centred teaching and learning method, which satisfies the constructivism theory- where knowledge is not taught but constructed by learners through constructing new knowledge based on old knowledge (Lou et al., 2017).

### Research Methodology

For this research report, different sources were searched using the word “flipped classroom”, “inverted classroom”: “reverse classroom”, “blended learning etc. in journals and websites. The following are the journals and sites that this research has referred to get accurate data:- ResearchGate, Canadian Center of Science and Education, Iopscience,

Sciendo, Journal of Dental Education, Scrib Open access journal, Open Journal of Social Science, Journal of Creative Education, International Journal of Information of Education Technology, other Open Access Journals and google scholar articles.

The relevant information was searched for Asian countries to assess the effectiveness of the flipped classroom. According to several studies, American educations have been effectively implementing this system; the research was intended to find out its effectiveness in Asian countries. China, India, Malaysia, Bahrain, Singapore, Indonesia, Kuwait, Bhutan and, Japan were covered in this research. USA, Brazil and Egypt were also studied randomly to assess the effectiveness of flipped classroom in general. However, only one research evidence is found for Bhutan on the Flipped Classroom.

Research report focused on various subjects: - Science, physics, management, music, mobile phones, physical education, English, mathematics, economics, vocabulary, pronunciation, ICT, pre-service teachers, dental education, Network Equipment and Management and, Business English Communication.

### **Research findings and discussion on the impact of the Flipped Classroom**

Mohanty and Parida (2016) research findings on flipped classroom compared the post-test scores; the Experimental/Flipped group performed better both in History and Science subjects in one of the schools in India. A small study was done by Dong (2016) [3] in Chinese college found out that the flipped classroom has made an outstanding contribution to China's college English education. Similarly, Zhang et al. (2016) conducted a research in one of the colleges in north China comprising of two groups of the class taught by two different teachers in two modes of delivery of the lesson. It was found that the score from the flipped classroom was higher than the traditional modes of delivery of lesson for English pronunciation. Another study by Zhang et al. (2016) made the comparison of the two classes also shows that vocabulary teaching in a flipped classroom is more effective than vocabulary teaching in a traditional classroom. An analysis of flipped classroom practices done by Li (2017) in Chinese Universities shows an improved students' learning autonomy and learning ability.

A flipped classroom employed by Wang (2018) [22] in music class (piano) in one of the colleges in China shows that the "flipped classroom" teaching model makes teaching more targeted and innovative. Quasi-experimental research carried out by Alias et al. (2020) shows that there is an improvement in students' interaction and more effective for the teachers to deliver lessons in a limited time. Research in Japan by Matsumoto (2016) through use of gamified flipped classroom shows positive evaluations of self-learning by the students. An immersive Web-Based Learning employed through Flipped Classroom by Abdelaziz (2014) has found all students in the experimental group scored higher in self-study skills and achievement. Besides, the same researcher also found out that students in the experimental groups were responsible for navigating and emerging ideas about course content and materials. A study by Lou (2017) on the effect of Flipped Classroom on "English translation" in Chinese college showed an improvement of students' translation skills for non-English majored undergraduates. Zhao &

Zhang (2019) [24] interviewed in the research shows more than 90% of students believe the flipped classroom method has possibilities to improve the initiative and participation in English learning. Hu et al. (2019) study on Network Equipment Configuration and Management using Flipped Classroom states that this teaching strategy solves the different requirements of students with different computer skills and teach students accordance with their aptitude. Liu (2019) [11] applied flipped classroom on Computer Application of Instruction and it proved that this application was effective in teaching. Kapil (2019) in his studies found out that the flipped classroom model on business valuation topic led to a significant increase in student achievement scores. Similarly, Amresh et al. (2013) preliminary results presented that the flipped classroom model positively impacted student scores.

As cited in Nwosisi et al. (2016) [18], director of Research Initiative at the University of Central Florida said that student success rates in hybrid courses are slightly superior to the face-to-face course and these courses have lower dropout rates. Several proponents and researchers claim this model not only boost student achievement but also enhances the achievement gap through more student-teacher interaction (Supiano, 2018) as mentioned in Setren et al. (2019). Besides, it also facilitates students to make teachers more responsive to students' need, especially for lower-achieving students. A research carried out by Lee & Kim (2018) at Harvard School of Dental Medicine stated 84% of students agreeing or strongly agreeing that the flipped classroom session was effective. Chen, Liu, and Martinelli (2017) [11] cited in Almodaires et al. (2019) found that Flipped learning led to improved student motivation and engagement. According to research carried by Prasetyo et al. (2017) states that 93% of the students were motivated to study physics and 89% of students were excited to carry on hands-on learning activity based on the flipped classroom. The research was undertaken by Jurmey and Lham (2019) in Bhutan on the flipped classroom shows that meantime saved by the flipped classroom strategy is 6.65 minutes per period of 50 minutes, each which account to 13.29%. The authors state that the flipped classroom enabled extra instructional hours to be used for syllabus coverage or other academic enhancement activities.

Many impressive studies were done in China on the use of the flipped classroom for teaching different subjects from schools to colleges and it has been found effective and successful which can be replicated in many other Asian countries.

### **Limitations of Flipped Classroom**

Flipped classroom requires strict requirements and supervision. The effect of pre-class work is not guaranteed, and classroom discussion is not active for some students. Also, teachers lack experience in organizing class discussion, lack technical abilities especially the ICT. Organizing learning materials online is a daunting task for the teachers. In some countries, not all students are fortunate to have cheap Internet and devices like phones, laptop and computers, which impedes the learning. The flipped classroom is mostly applicable to higher classes and colleges. The teachers need to update regularly on the latest development of ICT and technicality. Besides, the stakeholders like government, school management, and colleagues need to support each other to facilitate the

successful implementation of the flipped classroom. The government should provide easy access to cheap internet and provide infrastructures across the schools.

### Conclusion

Flipped Classroom is not limited to a few areas of specialization; it is pervasive. The flipped classroom has been effective in all fields of education. It engages the students in active participation through virtual learning and classroom activities. This involves the learners to learn at home through the use of various virtual learning resources and discuss with teachers and peers in the class. This has led to independent learning and motivation. This learning method also improved academic learning score and values of self-discipline to complete the task on time. However, to conduct a flipped classroom, a teacher needs to be trained for the latest technology and trends. This system also requires hard work from the teachers and collaboration from the stakeholders.

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