

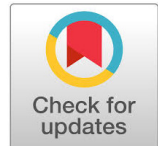




Challenges of Flipped Classroom in a Blended Learning Environment at Higher Education

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Abstract

The fundamental idea behind the flipped classroom is the alternative method of traditional lecture in which a large amount of information is imparted to numerous students at a time. Lecturing may not be effective at promoting levels of learning beyond knowledge and comprehension. The purpose of this study was to explore the challenges faced by teachers that come across during the teaching – learning process through the method of flipped classroom in a blended learning environment. Using an exploratory design having quantitative approach, this study targeted teachers currently serving at the private and public universities in Karachi, Pakistan to collect data regarding the students' engagement and their workload in the flipped classrooms using questionnaire. The findings reveal the increased students' engagement yet increased workload of teaches. Therefore, the study recommends the educational institutes to arrange workshops for teachers to reduce their challenges for the implementation of the flipped classroom in a blended learning environment at higher education.

Keywords

*Blended learning environment
Flipped classroom
Higher education
Teachers' workload*

INTRODUCTION

Blended learning is a teaching strategy that blends online and in-person interactions teaching and learning process which finds its best application through flipped classroom. Slomanson (2014) stated that one of the flipped classrooms is the ideal setting for organizing blended learning. Now a days flipped classroom is a popular approach of blended learning. In flipped classroom the teacher shares predetermined content with the students using digital resources outside the traditional classroom setting. While during the classroom both the teacher and students are involve in active, collaborative, and interactive problem- solving activities or we can say hands -on-activities are also carried out. The flipped classroom is an approach that switches in-class lectures with collaborative hands-on activities and requires students to preview course materials outside of class (Chen et al., 2014; Chen et al., 2018; Lai & Hwang, 2016). Flipped classroom is one of the prominent varieties of blended learning that allow students to go at their own pace. The blended learning paradigm, which includes the flipped classroom, gives students some discretion over time, place, path, and/or pace (Staker & Horn, 2012).

The fundamental idea behind the flipped classroom is the alternative method of traditional lecture in which a large amount of information is imparted to numerous students at a time. Lecturing may not be effective at promoting levels of learning beyond knowledge and comprehension (Akçayır & Akçayır, 2018; Bligh, 1985). This study addresses the challenges that popped out during the conduction of flipped classroom in a blended learning environment. Flipped classroom is a pedagogy which turn over the traditional method of teaching and learning. In flipped classroom, the work that was previously completed in the classroom was moved to the home, and the work that was previously completed at home was put into the classroom (Lage et al., 2000). Fundamentally, in flipped classroom, students learn and understand the content of their lessons at their home with different kind of videos, recorded lectures, PowerPoint slides as well as other technological applications and practice in hand or group exercises within the classroom. In flipped learning, partially or completely, direct instruction is delivered through videos and other media and the class time is used for engaging students in collaborative, hands on activities. The purpose of this study is to explore the challenges faced by teachers that come across during the teaching – learning process through the method of flipped classroom in a blended learning environment.

Research Question

- What are the factors that make flipped classroom challenging for teachers in a blended learning

environment?

LITERATURE REVIEW

Blended Learning

The educational sphere is embracing various advancement with the span of time which also involve use of technology in the teaching- learning process through Blended learning. According to Thorne (2003), blended learning is a type of educational model that combines traditional learning with e-learning, along with all the advances and upgrades that come with new technological developments, to promote classroom engagement. This advanced teaching strategy has been widely used throughout the global especially during the pandemic. Blended Learning is type of teaching-learning method that combines online learning with face-to face activities within the classroom. Rolé (2024) defines the blended learning as courses that integrate online with traditional face-to-face class activities in a planned, pedagogically valuable manner and where a portion of face-to-face time is replaced by online activity. In other words, Blended learning is a mixture of online and traditional teaching- learning methodology. Garrison and Kanuka (2004) write that “BL is the thoughtful integration of classroom face-to-face learning experiences with online experiences” (p. 96).

Flipped Classroom

The flipped classroom teaching methodology is a combination of inverted, within the class and outside the classroom activities. Students are responsible for the outside classroom activities but not in the form of filling worksheets, doing questions and answers rather they are responsible for watching course-related videos, visiting new websites and reading content related material using technology for creating a conceptual understanding about a certain topic. On the other hand, teachers are responsible for inside classroom activities that enhances student’s intellectual skills, pair or group work and practical learning. Lage et al. (2000) described this new teaching style as “events that have historically taken place inside the classroom now take place outside the classroom and vice versa” (p. 32). The basic idea of flipped classroom is that students acquaint themselves with the new content outside the classroom then use that material within the classroom for different intellectual activities along with teachers the following day.

The concept of Flipped classroom dates back to 1980s. Wesley Baker at Cedarville University introduced this method to use some resources in order to make availability of instructional material to students. The concept behind Baker’s plan was to make educational materials accessible to students outside of their regularly scheduled classroom instruction (Johnson & Renner, 2012). Flipped classroom practices as teaching strategy in the educational process. In order to implement flipped classroom, the educators need to consider four important pillars that facilitate flipped learning. The characteristics of flipped classrooms that make it easier to implement flipped classrooms are the pillars of flipped learning (Robert, 2012). These four pillars also regard as Flip Model. The four pillars consist of Flexible environment, Learning culture, Intentional content, Professional education.

Flexible Environment

The pillar flexible environment of flipped classroom reflects the need of flexibility in the learning environment, so it meets the requirements of students. concurrently, the manner of instructing and evaluating should also be flexible. Robert (2012) examines by giving students the option to decide when and where they wish to learn, teachers can foster a flexible environment. Nowadays this flexibility could easily avail through the use of technology.

Learning Culture

The second pillar reflects the primary goal of the flipped classroom is to alter the traditional way of teaching and learning which is teacher-centred to the student-centred approach. According to several

researchers, in order for flipped learning to be successful, the learning environment must change from a teacher-centred classroom to one that prioritizes the needs of the students (Markina et al., 2022; Al-Balushi et al., 2020). This can be created by reframing teaching methods towards providing opportunities to students for participation in different activities which show that the students are the centre learning rather than the product of teaching.

Intentional Content

In flipped classroom the content is design differently in two portions consisting of “in class-room activities and digital learning” (Kim, 2014). The content should be design intentionally in such a way that promotes high order thinking levels during exploration as well as during classroom activities among students. In order to create intentional content teacher’s role shift from an information giver towards assisting students to explore their learning relating to their educational content.

Professional Educators

The last pillar of professional educators depends on having teachers who are active observers, capable of offering effective feedback as well as are able to create interaction with the students. The relevance of the role played by the competent other in learning is not diminished by the flipped learning model (Nederveld & Berge, 2015). In several ways flipped class-room highlighted interaction between students and teachers more than the traditional teaching methods. As this interaction not only serves for transferring information but also to guide, support and to facilitate.

Theoretical Framework

One of the teaching methods is the flipped classroom strategies that flip the traditional method of education and instruction. In flipped classroom students are introduced with their lesson related content material at their home and their class time is use for different interactive activities along with the classmates and teachers. In this blended learning practice face-to-face collaboration is blended with learning, using technology independently at home. In order to adopt flipped learning in the classroom, it is vital to reconsider many of the underlying ideas (Segolsson et al., 2017). In the present era flipped classroom has become the most useable strategy. There are some important theories and concepts that supports flipped classroom in its successful implementation. These theories are the Cognitive Development Theory (CDT) by Jean Piaget (as discussed by Pakpahan & Saragih, 2022), the Socio- Culture Theory (SCT) by Lev Vygotsky (as discussed by Sarmiento-Campos et al., 2022) and the revised Taxonomy by Bloom (as discussed by Krathwohl, 2002).

Hypotheses

H₁: Engaging students alternatively in flipped classroom is a challenge for teachers.

H₂: Workload on teachers due to alternative mode of teaching is a challenging factor in flipped classroom.

METHODOLOGY

The research method adopted for the present research study was exploratory in nature using quantitative approach. A cross- sectional survey design was used to conduct the research. Descriptive statistics was used to draw results based on the empirical data. The target population of this research comprised of teachers from public and private universities in Karachi, Pakistan, following hybrid model of education. Accessible population embraced the teachers currently serving at the targeted education departments from both public and private universities in Karachi, Pakistan. Sampling frame consisted of male and female teachers experienced teaching and learning from 1 year to 4 years in university. The researcher used multi- stage stratified random sampling in order to gather data. In the beginning stage of the sampling step, researcher used simple random sampling to select universities from private and public sector in Karachi, Pakistan. In the next stage of sampling step, the researcher made strata of teachers

servicing at the education department from the selected universities using simple random sampling. In the third stage, two strata were formulated of teachers using flipped classroom as a tool for education. At the final phase of the sampling process, researcher made two more strata on the basis of gender for the selection of participants. The sample size of the present study included the teachers using flipped classroom as technique of blended learning for teaching and learning purpose from education faculty of public and private universities.

Instrument

The research instrument included an adopted questionnaire (Subramaniam & Muniandy, 2019; Itokazu, 2019) having close-ended items. The questionnaire was comprised of five sections based on theoretical framework of the study. The first part consisted of demographic information involving gender of the participant, type of university, computer literacy level, use of technological application for educational purpose and lastly the year of teaching. The second part was based on the difficulties of teachers while engaging alternatively during flipped classroom sessions. The third part focused on the challenges of digital division among students and teachers. Fourth part of the research tool highlighted the reluctance level from teachers towards the usage or absorption of new teaching learning methodology. The last part of the present research instrumental tool focused on the workload that flipped class-room created for the teachers. All ethical consideration were maintained throughout the data collection process. The collected data was analysed using the statistical package to find out if the hypotheses were supported or not.

RESULTS & FINDINGS

Table 1 describes the demographics information of the participating individuals. In this way, female participants (n = 52, % = 74.3) were significantly higher than that of the male participants (n = 18, % = 25.7). Most of the participants had moderate computer literacy level (n = 38, % = 54.3). Most of the participants used the technological application for education (n = 39, % = 55.7). Similarly, most of the participants had more than 2 years of teaching experience (n = 67, % = 95.8).

Table 1
Demographic Profiles of the Participants

Variables	Frequency	Percent	
Gender	Male	18	25.7
	Female	52	74.3
Computer Literacy Level	Beginner	15	21.4
	Moderate	38	54.3
	Advance	17	24.3
	Rapid	26	37.1
Use of Technological Application for Education	Medium	39	55.7
	Rare	5	7.1
Year of Teaching	1 Year	3	4.3
	2 Years	31	44.3
	3 Years	6	8.6
	4 Years or more	30	42.9
	Total	70	100.0

Table 2 describes the characteristic of the data receiving from the participants in terms of central tendency, dispersion, and data normality. From this perspective, the mean value of Teachers' Workload (TW) was found to be 2.413 having SD as 0.959, variance as 0.920, skewness and kurtosis as 1.050 and 1.051 respectively. The mean value of SE was found to be 2.528 having SD as 0.999, variance as 0.999, skewness and kurtosis as 0.835 and 0.166 respectively. The found values of skewness and kurtosis against each variable represented that the data was normally distributed.

Table 2
Descriptive Statistics for Variables

	TW	SE
Mean	3.413	3.528
Median	3.272	3.500
Std. Deviation	.959	.999
Variance	.920	.999
Skewness	1.050	.835
Kurtosis	1.051	.166

Reliability & Validity of the Instrument

Convergent Validity (CV) with Factor Loadings, Composite Reliability (CR), and Average Variance Extracted (AVE) were run using Statistical Package for the Social Sciences (SPSS) to measure the validity of the instrument. The Outer Loading of the items with > 0.708 were removed. The output values of Cronbach's Alpha (α), the test used for the measurement of the internal consistency of the items used for each construct, were found to be $> .6$, and hence declared satisfactory reliability of each construct. Furthermore, the Composite Reliability having CR values > 0.7 also display the Construct Consistency, according to Hair et al., (2021). Table 3 presents the outcome of hypotheses testing. The hypotheses were tested using One-Sample Test using the Test Value as 2.5 out of 5 based on the 5-point Likert scale. From this perspective, both hypotheses were supported. The findings of the present study conclude that engaging students alternatively and workload on teachers due to alternative mode of teaching in a flipped classroom are challenging for teachers.

The results of the one-sample t-test were used to determine whether teachers perceive challenges in implementing the flipped classroom approach (Table 3). For H1, which states that engaging students alternatively in a flipped classroom is a challenge for teachers, the results indicated a mean score of $M = 3.413$ ($SD = 0.959$). The t-test result $t(69) = -0.759$, $p = .040$ suggests that teachers perceive student engagement in flipped classrooms as a challenging factor. Since the p-value is below the significance level of 0.05, the hypothesis is supported. For H2, which proposes that workload on teachers due to alternative modes of teaching is a challenging factor in flipped classrooms, the mean score was $M = 3.528$ ($SD = 0.999$). The statistical test $t(69) = 0.239$, $p = .012$ indicates a statistically significant result. As the p-value is less than 0.05, the hypothesis is also supported, suggesting that teachers perceive increased workload as a significant challenge when implementing flipped classroom strategies.

Table 3
Hypotheses Testing

Hypotheses	t	df	M	SD	p	Status
H ₁ : Engaging students alternatively in flipped classroom is a challenge for teachers.	-0.759	69	3.413	0.959	0.040	Supported
H ₂ : Workload on Teachers due to alternative mode of teaching is a challenging factor in flipped classroom.	0.239	69	3.528	0.999	0.012	Supported

M = Mean, SD = Std. Deviation, P = Sig. values (2-tailed)

The findings indicate that teachers experience multiple challenges when implementing flipped classrooms, particularly related to student engagement and increased workload associated with alternative teaching methods.

Discussion

The findings of the present study regarding the students' engagement alternatively and workload on teachers due to alternative mode of teaching in a flipped classroom are supported by the reviewed literature in terms of challenging for teachers. For example, Lage et al. (2000) described the new teaching

style as an event taken place inside the classroom historically, now it takes place outside the classroom and vice versa. According to Markina et al., (2022) and Al-Balushi et al., (2020), the alternative mode of teaching in a flipped classroom can be created by reframing teaching methods towards providing opportunities to students for participation in different activities which show that the students are the centre learning rather than the product of teaching. According to Thorne (2003), the type of educational model, blended learning, combines the traditional learning with e-learning, along with all the advances and upgrades that come with new technological developments, to promote classroom engagement.

CONCLUSION

The findings of the present study reveal that engaging students alternatively in a flipped classroom is challenging for teachers, as it increases the workload of teacher due to an alternative mode of teaching, comparing to the traditional mode of teaching methods. Nevertheless, it has a significant potential to increase the students' engagement towards their increased learning both inside and outside their classrooms. Having reviewed the findings of the present study and reviewing the relevant literature, the study recommends the educational institutes to arrange workshops for teachers to reduce their challenges for the implementation of the flipped classroom in a blended learning environment at higher education.

Recommendations

Professional Development and Training for Teachers

Educational institutions should organize regular training workshops and professional development programs to equip teachers with the necessary skills to effectively implement flipped classroom strategies. Training can focus on instructional design, digital tools, and methods for facilitating active learning, which can help teachers manage classroom activities more efficiently.

Institutional Support and Resource Provision

Educational institutions should provide adequate technological resources, learning management systems, and instructional support to teachers. Access to digital platforms, multimedia tools, and technical assistance can reduce the burden on teachers and make it easier to prepare flipped classroom materials.

Workload Management Policies

Since increased workload was identified as a major challenge, educational institutions should consider adjusting teaching loads or providing incentives for teachers who adopt innovative teaching methods such as flipped classrooms. Administrative support, collaborative teaching models, or teaching assistants may also help reduce the workload.

Student Orientation and Preparedness

Students should be properly oriented about the flipped classroom model at the beginning of the course. Providing guidelines, introductory sessions, and digital literacy support can help students understand their responsibilities in pre-class preparation, thereby improving engagement during classroom activities.

Development of Shared Teaching Resources

Departments can develop shared repositories of instructional materials, such as recorded lectures, reading resources, and activity templates. This collaborative approach can reduce individual teacher workload and ensure consistency in teaching quality.

Continuous Monitoring and Feedback Mechanisms

Institutions should implement regular feedback systems to evaluate the effectiveness of flipped classrooms. Collecting feedback from both teachers and students can help identify practical challenges

and improve teaching strategies over time.

Implementing these recommendations can help educational institutions minimize the challenges associated with flipped classrooms, enhance teacher effectiveness, and improve student engagement in the learning process.

Competing Interest

The authors declare no conflict of interest.

Authors' Biography

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