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INVESTIGATING THE PROS AND CONS OF THE FLIPPED CLASSROOM IN AN AFFILIATED COLLEGE OF THE NATIONAL UNIVERSITY OF BANGLADESH

Anwar Husain[1]*, Mohammad Mohi Uddin[2]

[1] Md., Lecturer in English, Sylhet Govt. Women's College, Sylhet, affiliated with the National University of Bangladesh, anwarhusain7@gmail.com

[2] PhD in Instructional Technology (in progress) & Graduate Research Assistant, College of Education, University of Alabama, USA, mmuddin@crimson.ua.edu

*Corresponding Author

Abstract

The traditional classroom practice can be replaced with the flipped classroom instruction approach. In today's technology-oriented world, educators are showing a keen interest in the flipped classroom method as it has several positive outcomes. The flipped classroom system in Bangladesh gained popularity during and after the COVID-19 pandemic. Since the flipped classroom is a new concept for Bangladeshi educators, a study was conducted to identify the opportunities and challenges of implementing the flipped classroom approach in Bangladesh. The study employed a qualitative approach with thematic data coding and analysis to answer the research questions. The sample was purposive and included 5 teachers from different age groups and sexes who teach various subjects in higher secondary (12^{th} Grade) and tertiary college (Undergrad and Grad), as well as a total of 20 respondents divided into 5 groups for focused group discussion (FGD), a combination of male and female students from different ages and levels of education. The participant teachers, guided by the researcher, conducted 3 to 5 classes implementing the method and thereafter they were interviewed, and the students were called for group discussions. This research found that the flipped classroom is a technology-friendly, student-centered, interactive, self-paced, and flexible instructional approach that can improve students' learning outcomes. However, the flipped method has some limitations, too. Teachers may become reluctant to adopt this process as it takes much time to prepare lessons for example. Bangladeshi educators and learners can benefit from reading the study's findings and recommendations to gain insights into the flipped classroom approach. The findings will help educators to revise their conventional teaching to enhance learning outcomes.

Keywords: Flipped Classroom, Integration of Technology, Effective Teaching, Inclusive Learning, Higher Education

1. INTRODUCTION

1.1 Background of the Study

The ways of instruction in educational settings have been changing ever since with the passage of time and technological advancement. With the advancement of technology, learning and technology have become inseparable parts of each other. The advancement of technology is bringing a revolution in learning, and the

use of technology is making the flipped classroom a trending model of instruction (Brewer & Movahedazarhouligh, 2018). The flipped classroom method is mainly a method where the traditional system of classwork and homework is reversed with the help of pre-delivered materials (Bergmann & Sams, 2012). The flipped classroom is in line with the demand of 21st-century learners (Hoskins, 2011) because this approach, being a flexible mode of learning, allows the learners to take an active part in the class (Li & Wong, 2018). Students have a chance to develop their higher-order thinking in a flipped classroom learning environment (Uddin & McNeill, 2024). In Bangladesh, the concept of the Flipped Classroom method is very new. Therefore, much research on this topic has not been conducted in this country hitherto (Uddin & McNeill, 2024). But keeping in line with the developed nations as well as the demand of the millennium, the flipped classroom should be introduced in our teaching and learning system. To explore the opportunities and challenges of the method, this research has been conducted in a government college affiliated with the National University of Bangladesh.

1.2 Statement of the Problem

Uddin and McNeill (2024) opine that though learners are getting increasingly accustomed to virtual learning, the old traditional lecture method of instruction is mainly practiced in our country, resulting in a conspicuous gap between the demand of 21st-century learners and the method that is being practiced. They (2024) also acknowledged the effectiveness of traditional lectures and suggested adopting a suitable instructional method for our learners to make the most of education. In the lecture method, lack of interaction in the class is a conspicuous drawback because the traditional lecture method is teacher-centered and does not allow the classroom to be more interactive (Otukile-Mongwaketse, 2018). Besides, in the conventional method, a teacher can hardly make the class interactive and student-centered due to the short duration of in-class time (Uddin & McNeill, 2024). As a result, students can barely find the opportunity to develop their higher-order thinking and wisdom (Savery, 2015). In these cases, the flipped classroom method is a better alternative to the traditional lecture method in the teaching-learning process (Bhagat et al., 2016).

1.3. Objectives of the Research

The research objectives are to identify the opportunities associated with the flipped classroom learning mode and the challenges educators may face in implementing the method. To gain the objectives by settling the research problem, the study aims to address two research questions:

1.4. Research Questions

(i) What are the opportunities of the flipped classroom method in a government college in Bangladesh?

(ii) What are the challenges in implementing the flipped classroom in a government college in Bangladesh?

1.5. Significance of the Study

Although the teachers and students are somewhat familiar with online learning practiced during the COVID-19 pandemic, some are not acquainted with the flipped classroom method in its true sense (Khan & Abdou, 2021). The study exploring the implementation of the flipped classroom approach in Bangladesh holds significant importance in the realm of education. As traditional teaching methods encounter challenges in meeting the diverse needs of students, educators seek innovative approaches like the flipped classroom to enhance learning outcomes. By delving into the experiences of both teachers and students, this research depicts the opportunities and challenges associated with adopting this method in a context where it is still relatively novel. The findings highlight the benefits of the flipped classroom and address the practical concerns. Such insights will serve as a valuable resource for educators looking to adapt their teaching practices to engage better and empower students. Ultimately, this study will contribute to the ongoing dialogue on pedagogical innovation, providing actionable recommendations to facilitate the integration of the flipped classroom approach and ultimately improve educational outcomes in Bangladesh, the Indian sub-continent, and beyond.

2. LITERATURE REVIEW

2.1. The Flipped Classroom: Theoretical Underpin

The Flipped classroom is not a new idea. Rather, the flipped classroom concept traces its origin back to 1984 when Nechkina introduced the idea (Zainuddin et al., 2024). It gained further prominence with the publication of King's seminal work "From Sage on the Stage to Guide on the Side" in 1993. King's book laid the foundation for rethinking traditional teaching methods. Mazur's "Peer Instruction: A User's Manual" in 1997 provided additional insights into interactive teaching strategies, contributing to the evolution of the

flipped classroom concept. In 2000, Lage et al.'s study "Inverting the Classroom: A Gateway to Creating an Inclusive Learning Environment" further explored the benefits of reversing traditional teaching methods.

The practical implementation of the flipped classroom gained traction with the pioneering work of Bergman and Sams in 2007. Bergmann and Sams have played an important role in making the flipped classroom a popular method of instruction (Bergmann & Sams, 2012). The experiences documented in various publications and discussions highlighted the effectiveness of flipping the traditional lecture-based model, advocating for pre-recorded lectures to be watched at home, freeing up class time for interactive engagement and application of concepts.

The Flipped Classroom is a paradigm shift in instructional strategies and is evaluated as one of the most significant innovations in educational methods (Watters, 2012). Since time immemorial, the traditional way of teaching, which includes the delivery of lectures by teachers and the students just listening to them passively and doing their activities at home, has been practiced. However, the flipped classroom method seeks a reversal of the role of students. In this way of learning, students accomplish their homework in the classroom and do their classwork at home (Bergmann & Sams, 2014). In the Flipped classroom environment, the students listen to the lectures of their teachers sitting at home and do various activities inside the classroom with the collaboration of their mentors and peers (Bishop & Verleger, 2013).

In the Flipped Classroom method, there are some specific roles and responsibilities for teachers as well as for learners. Teachers' roles and responsibilities are very important as they act as facilitators in the learning process (Bergmann & Sams, 2012). Teachers' responsibilities include the flipping of pre-recorded discourse using certain online platforms before physical class (Bishop & Verleger, 2013), the creation of a favorable learning atmosphere where there should be questions and the dispelling of fallacies of the students (Bergmann & Sams, 2012), the rendering of guidance to confirm a congenial learning space and skipping the direct instruction (Johnson & Renner, 2012), the assurance of learners' participation in the classroom activities through making a collaborative learning atmosphere (Millard, 2012), the creation of interaction with every student (Cohen & Brugar, 2013), and providing feedback for the students in line with the academic customs (Nolan & Washington, 2013).

The roles of the students in the Flipped Classroom environment are equally important in making the process a success. The students' roles include watching video lectures before participating in the physical class and preparing for in-class events (Milman, 2012), building necessary communications with their fellow learners and tutors (Tucker, 2012), accepting the accountability of their learning (Bergmann & Sams, 2012), and reciprocating feedback by participating the classroom activities actively (Overmyer, 2012).

'Flexibility of learning', 'Learning Culture', 'Intentional Content', and 'Professional Educators' are the four constituents of the flipped classroom. These four elements are presented by the acronym 'FLIP'. Flexibility refers to the transcendence of place and time constraints of learning. 'Learning Culture' implies the paradigm shift from a teacher-centered to a student-centered learning process. Teachers are not considered the sole source of information and skills due to the availability of many online learning resources. 'Intentional Content' indicates the teachers' lesson plan that aims to fulfill all students' demands. 'Professional Educators' refers to the role and responsibility of educators. The teacher continuously assesses their learners' improvement and passes feedback (Flipped Learning Network- FLN, 2014).

2.2. Opportunities of the Flipped Classroom

Kvashnina and Martynko, (2016), opined that flipped classroom instruction is generally flexible, easily reachable, collaborative, and more significantly engaging for the learners. The term flexible refers to the idea that the learners in a flipped classroom environment can learn their lesson at their own pace and have access to video classes anytime from anywhere meaning there are no restraints on time and place (Fulton, 2012). Besides, 21st-century learners are technology literate, and most have smartphones, which helps them foster their study engagement (Uddin & Bailey, 2024).

The Flipped Classroom emphasizes active learning by allowing students to be more interactive and collaborative with teachers and peers (Foster & Stagl, 2018). The flipped classroom strategy enables students to solve problems and communicate effectively as they need to engage with others and problem-solving activities in the class (Hao, 2016).

Flipped classroom learning is group learning rather than individual learning. Group learning is effective for understanding a topic easily. A flipped classroom is student-centric but teacher-led. Teachers would lead the class by creating a congenial atmosphere for collaborative and active learning (Flipped Learning Network-FLN, 2014). The flipped classroom underscores the learning activities that stimulate critical thinking and motivation among students (Bhakti et al., 2019). The learning process where a learner acquires knowledge

and wisdom with collaboration and care of his or her friends can be termed peer-assisted knowledge (Topping & Ehly, 1998). In the flipped classroom method, students can get the opportunity to learn their lessons and gain knowledge and expertise with their friends' active help and support (Nederveld & Berge, 2015).

Lai and Hwang (2016) say that in a flipped classroom environment, students engage in an active learning process characterized by proactive participation and interactive educational methodologies. Students become active listeners instead of passive listeners of the traditional lecture method of instruction (Davies et al., 2013). As the Flipped Classroom method is a self-directed and self-paced learning process, students are held responsible for learning (Blaschke, 2012), and students can engage themselves in effective learning events (Sohrabi & Iraj, 2016).

Within the framework of the flipped learning method, students engage in several learning activities designed to cultivate their higher-order cognitive faculty (Roehl et al., 2013). Kellinger (2012) opines that the flipped classroom environment propels the learners to contemplate the issues of a lesson both inside and outside the class. Most learners, whether from rich or poor families in Bangladesh, have their own devices or smartphones (Uddin & Bailey, 2024). The cognitive capacity of the students demonstrates augmentation with the process of the flipped classroom method. Among the manifold advantages of the Flipped Classroom, enhancement of learners' performance, achievement of larger learning outcomes, and improvement of students' inspiration are some of the significant ones (Janotha, 2016; Smallhorn, 2017; Wiginton, 2013 & Yilmaz, 2017).

Students need to develop their social skills, and the flipped classroom environment helps them develop their social skills as the method is collaborative (Johnson & Johnson, 1999). According to Bergmann & Sams (2012), as the teachers do not deliver lectures in class, the learners can spend much time on small group activities that allow them to communicate meaningfully with their peers and teachers.

2.3. Challenges of the Flipped Classroom

The Flipped Classroom method is not above limitations. It has several disadvantages, too. Some financially challenged students may face difficulties accessing technology (Du et al., 2014; Milman, 2012; Enfield, 2013). It takes a considerable amount of time to make a lecture that aims to satisfy the needs of all sorts of pupils and record it for flipping (Enfield, 2013). This time-consuming process may not attract teachers accustomed to the traditional lecture method of teaching. There are activities inside and outside the classroom in a flipped classroom setting. But both activities are interdependent. If one is not done, the whole process may be unfruitful. However, monitoring the activities outside the classroom is not an easy task for the mentors (Kordiban & Kinash, 2013). It is a big challenge for teachers to facilitate meaningful in-class activities for students in a flipped classroom setting if the learners do not come to class having watched the video lectures flipped by their mentors (Milam, 2012). Milam (2012) further opines that video quality matters in a flipped classroom climate. If the quality is not good and the students fail to understand the elements of the video due to its poor quality, they will stumble to make themselves equipped for the next inside class activities. Teachers comfortable with the traditional lecture method may find it very strenuous and cumbersome to spend time preparing videos and making plans for inside-class activities. A very conspicuous impediment to implementing flipped classrooms is the inefficiency of teachers in using technology, which is the soul of flipped classrooms (Aidoo et al., 2022). All the challenges of flipped classrooms can be overcome or minimized if the stakeholders uphold a positive outlook and exert sincerity in implementing the newer method of instruction (Huereca, 2015).

2.4. Flipped Classroom in Bangladesh

Flipped classrooms are relatively new in Bangladesh (Chowdhury, 2019). The way teachers dealt with the teaching process during COVID-19 conforms to the flipped classroom instructional method in a broader sense (Khan & Abdou, 2021). At that time, teachers used various online platforms to deliver their lectures and continue the learning process during the state of emergency. That is how the flipped classroom concept has been introduced here in Bangladesh. However, there has not been much research on the issue of the Flipped Classroom in Bangladesh. The number of research papers on this issue is a handful. More investigation is needed to motivate Bangladeshi educators to understand the flipped classroom approach.

3. OVERVIEW OF RESEARCH METHODOLOGY

3.1. Research Design

A qualitative research design with thematic analysis was used in this study to gather data that would address the research problems and answer the research questions. A thematic analysis was made to delve deep into

the respondents' perceptions, experiences, and opinions. The teachers and students who participated in the interviews and focus group discussion (FGD), respectively, had prior experience with the Flipped Classroom method. For this reason, an action research design was adopted, allowing for collecting empirical data based on first-hand experiences rather than theoretical assumptions. Action research is in the sense that the researcher initially trained five colleagues on the flipped classroom method and asked them to conduct classes using the same approach. These classes were conducted at different levels: 12th Grade, Undergrad, and Graduate, and the researcher interviewed the teachers afterward. The research design also included arranging group discussions of students with flipped classroom experiences, recording the discussions, transcribing and translating the feedback into English, and analyzing them based on the themes that emerged from the data collected from the respondents.

3.2. Research Sample and Context

The study was conducted at a government college affiliated with the National University of Bangladesh; it is in the Sylhet district of Bangladesh and situated in an Upazila (a sub-unit of a district) area. Most of the students in this college come from rural areas within the Upazila, where modern amenities may be scarce. However, the majority of college students have access to electricity, internet connection, and electronic devices. The research samples used in the study were purposive. Five teachers of different genders (male and female) and ages (around 30 years to 50 years) were selected from those who teach different courses in higher secondary (12th Grade) and tertiary levels (Undergrad & Graduate). It is worth mentioning that all the teachers are university graduates. Additionally, 20 students from different majors/ programs, age groups (18 years to 24 years), and levels of education (class XII to MA level), a combination of male and female, were chosen for interviewing and divided into 5 groups consisting of 4 members in each group, who were informed and recruited from classes with the help of five teachers involved with the study. The aim of selecting students from different subjects, age groups, and levels of education was to explore the barriers and opportunities that might arise based on these factors. It is worth noting that the student samples were selected from those with prior experience with the flipped classroom method.

3.3. The Method and Data Collection

The researcher developed a set of six open-ended questions (table 1) for the selected teachers and focus group participants to investigate the research questions. Next, the researcher introduced the flipped classroom method to five teachers, explaining the concept and how to apply it. These teachers then implemented the approach in three to five classes, following the researcher's instructions. The classes were limited to five because the researcher had time constraints. Then the researcher conducted one-on-one interviews with each teacher, recording their responses in Bangla, the native language of the participants, with their permission. The researcher invited 5 groups, each consisting of 4 members, to conduct group discussions on the flipped classroom method to elicit their insights, and opinions based on their experiences. All data was stored in a computer protected by a password, and the interviews and focus group discussions were transcribed and translated from Bangla to English.

Table 1- Interview Questions

No	Questions for interviews of teachers and FGDs of students:
1.	Overall, what do you think of the Flipped Classroom idea?
2.	What are the potential benefits of the FC?
3.	What are FC's potential challenges or barriers?
4.	How is a flipped classroom different from a traditional classroom?
5.	How can a Flipped Classroom increase students' engagement and performance?
6.	Is there anything else you would like to say about FC?

3.4. Method of Data Analysis

The researcher utilized a combination of interviews and focused group discussions to gather primary data from the respondents. The researcher used an Excel sheet to manually enlist code from the transcripts to categorize the data. Then, the researcher carefully examined specific themes to align the findings with the

research questions. The researcher was able to identify themes that emerged across the responses of multiple participants. These analyses of the primary data were conducted thematically, allowing the researcher to gain a more nuanced understanding of the research questions at hand. This approach enabled the researcher to derive meaningful insights from the data and answer the research questions effectively.

3.5. Findings of the Research

This section comprises findings and discussion. The themes (Figure 1& 2) generated during the data analysis were presented in this part. Themes are like compressed data. These themes were analyzed elaborately in the discussion session. At the time of analysis, in the discussion section, secondary data were also used along with the intuitive remarks of the author. Alphanumeric codes were used as pseudonyms for the teachers (T1 to T5) and the five focused groups (FGD1 to FGD5) to maintain confidentiality. The major themes that were constructed at the time of data analysis were articulated below. The findings are presented in narratives with honesty and sincerity, which are the essence of qualitative research (Tracy, 2010). Here, the narratives of the teacher respondents are presented first, followed by the narratives of the student respondents against each of the themes.

Figure 1-The Advantages of the Flipped Classroom

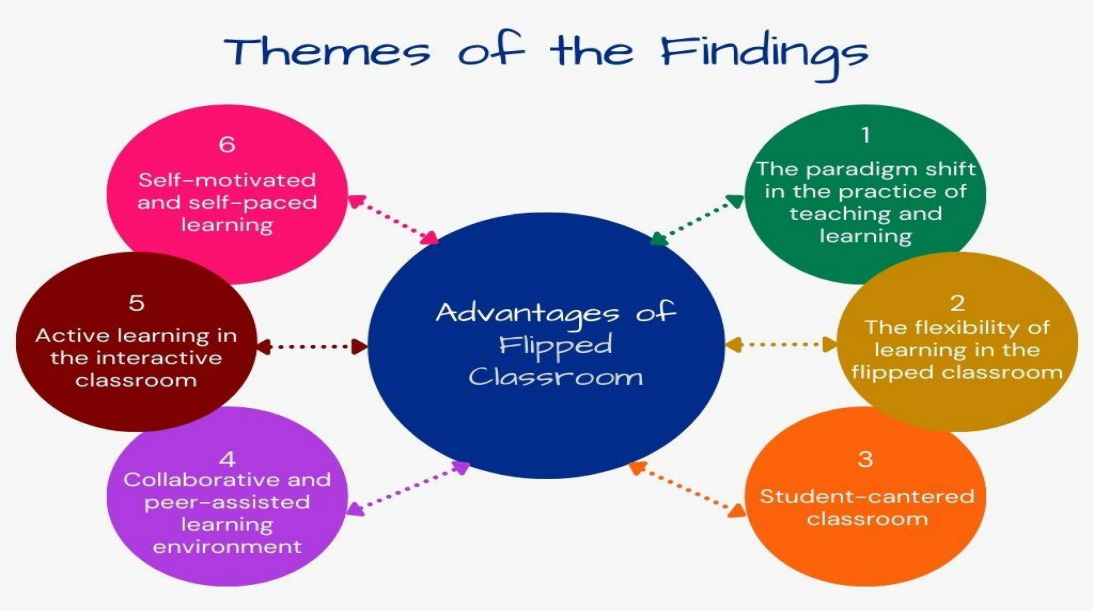
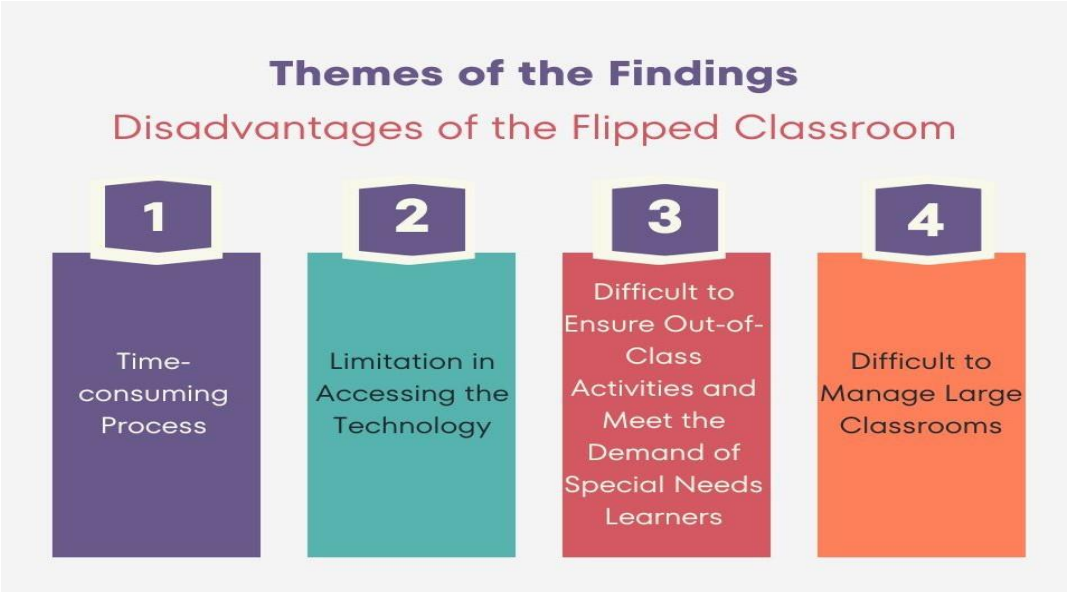


Figure 2-The Disadvantages of the Flipped Classroom



3.6. Opportunities in the Flipped Classroom

Knowing the opportunities of implementing the flipped classroom at an affiliated college of the National University of Bangladesh is essential to answer the first research question. From the interview and FGD data, the following themes were constructed, and these themes together helped to provide the answer to RQ.1—What are the opportunities of the flipped classroom method in teaching-learning?

3.7. The Paradigm Shift in the Practice of Teaching and Learning

Four of the five interviewed teachers considered the flipped classroom as a paradigm shift in teaching and learning. The traditional method of teaching-learning was the teacher-centered lecture method; teachers were considered as the sole source of information and knowledge. The students usually listen to the lectures of their teachers, make notes in their notebooks, and use books and printed materials as sources of knowledge and information. In a Flipped Classroom setting, the classroom is student-centered. Furthermore, students these days are known as 21st-century learners who are well acquainted with modern technologies, which has made it easy to implement the flipped classroom method: “I think the flipped classroom method of instruction is a transition of teaching-learning from traditional to modern teaching based on technology to meet the demands of 21st-century learners,” T1 said. The T2 said, “I believe the newer method of delivering and receiving knowledge commensurate with the needs of modern learners with sophisticated knowledge of technology.” The FGD2 observed, “The flipped classroom method is a change in the traditional teaching-learning process. This new mode of instruction shall be helpful in the context of a digital era.” Participants of FGD5 opined, “We have seen a significant change in the instructional method of flipped classroom as compared to the traditional lecture-based teaching-learning process.”

3.8. The Flexibility of Learning in the Flipped Classroom

The theme of the flexibility of learning in the flipped classroom environment was recurrent in the responses of the interviewed teachers and students’ FGDs. Students can learn their lesson without facing any time barriers and place barriers that are present in the traditional mode of learning. Students can access their lessons anytime, staying anywhere, and as many times as they require: “I think the opportunity of accessing the lesson anytime, anywhere is an amazing feature of the flipped classroom method. This flexibility will help improve student’s learning outcomes,” T4 opined. “I believe the flipped classroom method is a flexible and effective method of instruction,” T3 said. FGD1 reflected, “We can access our lessons as many times as we need and learn them with ease. The resources remain available for us, and we feel a kind of relief from the stress of missing any class.” FGD3 echoed, “The flipped classroom method is flexible as we can access the uploaded video lectures anytime anywhere.”

3.9. Student-centered Classroom

The interviewed teachers and the participant students of FGDs considered the flipped classroom, without any disagreement, as a student-centered method of learning. The role of teachers in this sort of classroom is the role of a facilitator who acts as a catalyst to make the students engage in the classroom activities: “I see that the flipped classroom is a student-centered classroom where students are the focal point, and they are given ample opportunities to nurture their latent talent in the classroom,” T3 said. T5 opined, “I think students’ talking time will be more than that of the teachers in a flipped classroom.” FGD4 voiced, “We get the opportunity to express our ideas and feelings better in a flipped classroom setting.” FGD2 articulated, “We think students are prioritized in a flipped classroom environment and most of the activities revolve around the students.”

3.10. Collaborative and Peer-Assisted Learning Environment

During the conversation, an important theme became conspicuous: the flipped classroom method promotes group learning strategies rather than individual learning styles. Learners can learn their lessons and accomplish their assignments and projects with the collaboration of their peers: “I think the way students work in groups in the flipped classroom setting helps learn their lessons collaboratively,” T5 said. “In the flipped classroom environment, students are assigned to various group works and they learn their lessons in collaboration with one another,” T2 opined. FGD5 observed, “We can learn our lessons with the help of our friends and teachers in the flipped classroom. This is of course a positive aspect of the system. It helps us prepare ourselves to be fit for working in teams and groups.” “The flipped classroom method gives us the facility to learn our lessons collaboratively. We help one another to understand any lesson and work together in groups to accomplish assignments or projects,” FGD2 opined.

3.11. Active Learning in the Interactive Classroom

While talking about the benefits of the flipped classroom, all the teachers interviewed came up with the observation that the method facilitates a classroom where students can engage themselves in meaningful interactions with their peers and teachers. Unlike the traditional mode of the classrooms, students do not just listen to their teachers passively. Rather, they participate in discussions, debates, quizzes, and other group works and ask their teachers questions to become clear on issues they face difficulties deciphering: "Students take an active part in a flipped classroom environment. They ask their teachers, talk to their peers, and try to understand the issues of the lesson meaningfully,' T4 said. T5 opined, "As the students come to class watching the video lectures, they can take part in meaningful interactions with their peers and teachers." FGD4 observed, "The knowledge and ideas we gather doing outside class activities help us engage in fruitful interactions with our teachers and friends. We do not get the opportunity to sit idly like in a traditional classroom."

> FGD2: Since we get the class material before coming to the classroom, we can have prior knowledge of the topic to be discussed in the classroom. As a result, we can take an active part in the discussion and grasp the lessons easily. We can develop our social interaction by making interactions with our friends.

3.12. Self-motivated and Self-paced Learning

Another key theme that has emerged from the discussion with the students and teachers is that the flipped classroom method of learning is dependent on self-motivation and is self-paced by nature. Here, self-paced refers to the level of cognitive ability of learners. A student can understand a lesson by watching the video lecture once, but other students may be required to watch the same video several times to understand it: "Students get the facility to learn their lessons at their own pace because the lessons are available on the internet and students can watch it as many times as they wish," T4 observed. T1 said, "I think the flipped classroom method helps students become self-motivated and they can learn their lessons with ease as per their cognitive capacity." FGD3 observed, "As the lecture videos remain available on online platforms, we can learn our lessons according to our pace of learning ability. Motivations of learning come within us as we participate in class discussions and other activities." "The flipped classroom method allows us to learn lessons at our own pace. We do not need to be stressed about missing the lectures," FGD1 articulated.

3.13. Challenges in the Flipped Classroom

Despite having manifold opportunities for the flipped classroom method of instruction, it has several challenges, too. While analyzing the interview and FGD data, the following themes emerged, and they are essential in answering RQ2—What are the challenges in implementing the flipped classroom in a government college in Bangladesh?

3.14. Time-consuming Process

While the respondents were discussing the challenges of the flipped classroom method, they came up with the theme that the whole process is time-consuming. A considerable amount of time is needed to prepare and flip a video lecture. This is a challenging task for the teachers, but those who are dedicated do not see this as a barrier: "Although the flipped method has many opportunities, teachers may not accept it for the reason that it will kill much time for planning, making video lectures, monitoring students' engagement, and giving feedback," T5 opined. T3 observed, "I think one of the biggest challenges for implementing the flipped classroom method is that it takes much time to complete the cycle of a class." FGD4 observed, "That we have to spend a lot of time in preparing ourselves for attending a flipped class is a challenging issue." "Students need to invest much time in outside class activities. This may be a challenge in implementing the method," FGD1 opined.

3.15. Limitation in Accessing the Technology

An important negative aspect of the flipped classroom came through the discussion in the interviews and FGDs: if there is any deficit in accessing the technology, the whole system will not work. However, if this problem is for individual students, it can be solved. Three teachers asked whether it is possible to implement the flipped classroom method without considering the socio-economic background of the teachers and the students: T4 opined, "The flipped classroom is an epoch-making innovation in the education sector, and it conforms to the digitalized era, but it would be difficult to implement it everywhere due to the limitations of accessing the technology." T5 observed, "I am happy to learn about the flipped classroom method for the advantages inherent to it. However, I am afraid of the proper utilization of the benefits of the method because of socio-economic constraints." While the FGD1 focused on, "The implementation of the flipped classroom

may face the challenge of limited access to technology due to less privileged socio-economic condition of the stakeholders." FGD5 opined, "If the technology is not available to the teachers and the students under consideration, the method may not prove to be a fruitful one."

3.16. Difficult to Ensure Out-of-Class Activities and Meet the Demand of Special Needs Learners

While discussing the challenges of the flipped classroom method, this theme has been constructed through the narration of the respondents. It is difficult to make video lectures that can cater to the demands of students with special needs alongside mainstream students. Watching the video lectures is also important to make the in-class activities interactive and effective. However, it is too difficult to monitor the out-of-class activities of the learners: "It is no doubt a significant challenge to ensure that the students are doing their outside class activities carefully," T1 opined. T2 stated, "I think it would be quite a difficult task to make a video lecture fulfilling the needs of every type of learner. There might be special needs students, and addressing their issues in the video lectures might be a challenge." FGD3 observed, "The lectures flipped by the teachers are sometimes hard to follow by some students. What some students may find easy may appear difficult to other students." "It is an important concern that the teachers can hardly monitor our outside class activities, which can hamper our academic progress," FGD4 mentioned.

3.17. Difficult to Manage Large Classrooms

The teachers said that it would be very difficult to manage a large class while applying the method of the Flipped Classroom. This is because there would be a lot of noise, and making small groups would be challenging. One-on-one interaction with students would become very tough: "I think applying the flipped classroom in a large classroom that we normally have is a difficult task. It will be difficult to manage the classroom for a teacher," T3 observed.

> T2: Our classes are usually extra ordinarily large. Some classes comprise of 200 to 300 hundred students. Implementing flipped method in those classes would be a difficult task. Because making groups and monitoring their work would obviously be a challenging task for a teacher.

4. DISCUSSION AND CONCLUSION

4.1. Discussion

The flipped classroom method is a wonderful innovation in the teaching industry (Watters, 2012). The flipped classroom method is an epoch-making change in the mode of institutional education, which has incorporated technology in its essence. The teachers and the students observed that the learning process in a flipped classroom environment is flexible (Li & Wong, 2018; Kvashnina & Martynko, 2016); Fulton, 2012). Flexible in the sense that a student can find the video lecture at any time from any place, and they can watch it as often as needed.

Interviewed teachers and the participants of FGs observed that the flipped method is student-centered but teacher-led because the teachers act as facilitators in the flipped classroom setting, as mentioned in Bergmann & Sams (2012). Students' talk time is greater than that of their teachers in the classroom. While doing in-class activities, teachers guide the students to do various activities like discussion and debate and give them necessary feedback. Student-centred also implies that the focal point of the class is the students. Students in a flipped classroom learn their lessons with the cooperation of their teachers and peers, which is evident in Foster and Stagl (2018). The flipped method inspires the students to be collaborative. For example, students must form many groups in a flipped classroom, and in doing so, they help each other and engage in interactions with their peers, as mentioned in Hao (2016). These collaborative behaviors have a positive impact on their social and professional lives (Johnson & Johnson, 1999).

When the students get a lesson prior to their coming to class, they come to the class with ideas about the topic to be discussed. As a result, they can actively take part in the discussion. They can ask their teachers to fill up the gap in the knowledge they have. That is how the student's engagement in classroom discussion is increased (Lai & Hwang, 2016). Learning in a flipped classroom atmosphere depends largely on the students. In the traditional mode of learning, teachers are thought to be responsible for students' learning. However, students must shoulder the responsibility of learning using the flipped classroom method, as the method is considered self-motivated (Blaschke, 2012). The flipped method needs motivation within. Every student has the chance to learn his/her lessons at his/ her own pace. If a student cannot understand a lesson watching one time, he/she can watch the lesson as many times as needed. That is the essence of self-paced.

The flipped method of instruction is challenged when the respondents talk about the challenges of the system. Data from this study showed that the flipped method is a time-consuming method (Enfield, 2013). Teachers need to choose a topic, study it well, make a recorded video lecture, and upload it on certain online platforms. Then, they also need to observe the activities of students outside of class. Therefore, teachers may be reluctant to adopt this method so as not to burden themselves with workloads.

In rural areas of Bangladesh, many students cannot afford a smart cell phone or personal computer. They also do not have the financial ability to buy internet packages. These constraints are significant challenges to the implementation of the flipped classroom and this issue is evident in Du et al., (2014); Milman, (2012); and Enfield, (2013). When a class size is unusually large, the activities of inside class become difficult to do. Making groups will be difficult. Interaction of teachers with each student is not easy there. Assessing every student and giving them feedback is also a challenging task.

According to available data of this study, it is a difficult job for a teacher to produce video lectures meeting the demands of students of all levels including special needs students. This is an important challenge from the side of the teachers. The teachers may also find it difficult to oversee the out-side class activities of the students (Kordiban & Kinash, 2013).

No challenges have been found based on gender and subjects. There are some issues with different age groups and levels of education. It has been found that elderly teachers are reluctant to embrace the newer method as many of them lack the technological awareness needed to implement the flipped classroom (Aidoo et al., 2022). In the tertiary level, the flipped classroom is being practiced, but it is difficult to implement the method at the primary and secondary levels of education due to the large class size and the absence of student self-motivation.

4.2. Conclusion

The findings from the study on implementing the flipped classroom approach in Bangladesh provide valuable insights into both the opportunities and challenges associated with this innovative teaching method. The flipped classroom has numerous implications that can significantly improve the learning process. By utilizing this method, students can acquire knowledge more effectively and sustainably. While the flipped classroom offers numerous benefits, such as a paradigm shift towards student-centered learning, flexibility, collaboration, interactivity, and self-paced learning, it also presents challenges, including the time-consuming nature of preparation, limited access to technology, difficulties in catering to special needs learners and managing large classrooms effectively. Educators considering the adoption of the flipped classroom model should take these factors into account. To maximize the benefits and mitigate challenges, educators should invest in professional development to enhance their technological skills and pedagogical approaches, collaborate with colleagues to share resources and strategies, provide equitable access to technology for all students, and implement differentiated instruction to meet the diverse needs of learners. Additionally, ongoing research and evaluation of flipped classroom practices within the context of Bangladesh will further enrich the literature and inform evidence-based strategies for enhancing teaching and learning outcomes in the future.

4.3. Implications for Practice

This study highlights significant implications for adopting and implementing the flipped classroom approach in Bangladeshi higher education, particularly in government-affiliated institutions. Recognizing the flipped classroom as a paradigm shift necessitates a transition to more student-centered, technology-driven teaching strategies, aligned with 21st-century learners' needs. The approach has the potential to enhance student engagement and learning outcomes, suggesting that institutions should invest in supporting flipped classrooms.

However, challenges such as the time-consuming preparation of materials, limited access to technology, and the difficulty of accommodating special needs students in a flipped classroom setting must be addressed. To overcome these barriers, it is crucial to provide adequate support for both educators and students, including professional development and ensuring equitable access to technology. Additionally, the scalability of the flipped classroom in large class settings and the socio-economic disparities affecting technology access highlight the need for context-specific solutions and inclusive policies.

Overall, the successful implementation of the flipped classroom in Bangladesh requires a comprehensive approach that addresses pedagogical, technological, and socio-economic challenges, aiming to improve educational outcomes and promote greater equity in education.

4.4. Limitations of the Study

While the study on implementing the flipped classroom approach in Bangladesh provides valuable insights, it is essential to acknowledge its limitations. The small sample size and focus on a single institution restrict the generalizability of the findings to the broader educational landscape of Bangladesh. By not including multiple institutions, the study may overlook variations in implementation and outcomes across different contexts. Moreover, only the qualitative method research design raises concerns about the reliability and validity of the data collected, potentially compromising the robustness of the findings, while a mixed method would be a better fit. Additionally, the constraint of funding presents a challenge as it has impacted the scope and depth of the research, limiting opportunities for comprehensive data collection and analysis.

4.5. Recommendation for Future Research

Moving forward, it is imperative for future studies on the implementation of the flipped classroom approach in Bangladesh to address the limitations identified in this research. Firstly, the researcher should aim to broaden the sample size and include multiple institutions to capture a more diverse range of experiences and perspectives. This will enhance the generalizability of the findings and allow for a deeper understanding of the varied contexts in which the flipped classroom is being implemented. Secondly, adopting a mixed-method research design that combines qualitative and quantitative approaches can provide a more comprehensive understanding of the phenomenon, enabling researchers to triangulate findings and strengthen the validity of their conclusions. Moreover, securing adequate funding is crucial to support larger-scale research endeavors, facilitating thorough data collection, analysis, and dissemination of findings. By addressing these recommendations, future studies can contribute more effectively to the knowledge base on flipped classroom implementation in Bangladesh, ultimately informing evidence-based practices and improving educational outcomes across the country.

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