Rima International Journal of Education (RIJE), Vol. 4 (No. 1): March 2025; Page: 199-211 ISSN: 2756 - 6749

Factors Influencing Students Motivation in a Flipped Classroom in Kebbi Sate University of Science and Technology, Aliero

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Abstract

Flipped classroom is a student-centered approach that enables students to acquire knowledge before the class and use the classroom time to practice and apply concepts and ideas through interaction with peers and teachers. Many studies explored the impact of the flipped Classroom model over the conventional teaching method. The model enhances students' engagement and learning achievement. However, little is known about the factors affecting student's motivation in the FC model. Therefore, this study employed a qualitative method to explore the factors influencing students' motivation in a flipped classroom and investigate the advantages and challenges of using the FC model. A semi-structured interview was used to collect data. Twenty 200 level undergraduate students were interviewed based on the condition that they must have taken flipped classes. Thematic analysis was used to identify the factors affecting students' motivation. The results showed that the perceived relevance of pre-class materials, learning independence, Clear expectations, responsibility, technological know-how, and access to necessary resources extensively influence students' motivation in the FC model. Furthermore, the results revealed that the FC model benefited students by increasing student engagement, promoting active and personalized learning, encouraging teamwork, and fostering a deeper understanding of class materials and concepts. However, the results also revealed some challenges students faced during the FC, including unstable internet connection, lack of computer access, and poor steady power supply. The study concluded that certain factors need to be considered for the successful conduct of the FC model. More so, institutions should integrate the use of flipped classroom in their instructions as well as instructors should adopt motivating strategies when using flipped classroom

Keywords: Motivation, Students, FC model, Advantages, Challenges

Introduction

Recently, the implementation of flipped classrooms (FC) in colleges and schools has increased to a high level in response to the demand for technology-enhanced and student-centered learning environments (Steen-Utheim & Foldnes, 2018; Samaila & Al-Samarraie, 2023). Flipped classroom is a blended teaching method that combines online learning and face-to-face classroom activities (Thai *et al.,* 2017). It is an innovative teaching method in which the lecture materials are given to the students before the physical class time while the classroom time is used for discussion, problem-solving, assessment, individual learning, and presentation (O Flaherty & Phillips, 2015). In the flipped classroom model, the role of the teacher includes preparing recorded lecture

materials, guiding, facilitating, supporting, giving feedback, evaluating the learning process (Lizhu *et al.*, 2018), and providing a conducive environment for individualized learning (Lai, 2015). The student's role in flipped class is to watch the recorded video content, complete learning activities, and participate actively in the online discussion before the class hour.

Motivation is central to a student's educational experience from kindergarten onward. When motivated, students are more likely to participate in the learning process and exert more significant effort, which can positively influence their academic performance. Students motivated in FC will be more positive and energetic in the classroom and toward learning. They will likely take initiative in their learning and persist through complex material, mistakes, or tasks.

Lack of motivation in FC affects student's ability to gain knowledge and skills even if they have the most outstanding abilities. Motivation is the first condition for completing a learning task and the driving force behind the educational mobile process (Lazowski & Hulleman, 2016). Lack of motivation is a primary cause of academic failure, negatively impacting students' performance (Garay & Orjuela-Segura, 2022). When students are not motivated in FC, improving their academic performance is difficult and nearly impossible. Unmotivated students can disengage and discourage others from using the FC model, affecting the entire learning process. For an effective use of the FC model, there is a need for solid learning motivation among the students. Therefore, assessing students' motivation in a flipped classroom is imperative (O'Flaherty & Phillips, 2015).

Understanding the factors influencing students' motivation in the FC model is essential for educators to effectively design and implement FC activities that engage and motivate students to participate actively in their learning. Lecturers have adopted the flipped classroom model in Nigeria to improve their teaching styles and students' performance, engagement, participation, and retention. However, some lecturers need help keeping students sufficiently motivated using the FC model. Therefore, this study investigates the factors influencing student's motivation in the FC model for better educational outcomes.

Student Motivation in a Flipped Classroom

Motivation is the force that keeps students going even when they are faced with challenges and barriers. It charges them with the energy they need to fulfill their potential and see value in what they are learning and will be determined to achieve their goals. Motivation in the FC model will enable students to be committed, persistent, consistent, and innovative (Hannah, 2021; Samaila et al., 2024). Kettles (2013), in his study, established that students with higher motivation had higher levels of achievement, especially when using the FC model. Several factors motivate students in the FC model; a few amongst many are the content and length of the videos, captivating slide transitions, short activities to be completed, which could be a part of students' assessments, tonality, pitch, intonation, and visual effects can help to keep students more engaged in the content they are watching.

The FC model indisputably promoted student-centered learning and collaboration, where students had the opportunity to participate in group discussions and engage in interactive learning, problem-solving, and decision-making activities. Accordingly, enhanced learning is a result of the use of good active learning techniques rather than merely flipping the classroom. Students who are motivated in the FC model have control over their learning and have the option of learning at their own pace. Active engagement is an essential factor influencing student's motivation in the FC model because it provides students with a sense of purpose and relevance to their learning (Strayer, 2012).

Other factors influencing students' motivation in the FC model include relevant pre-class materials, learning independence and self-direction, clear expectations and responsibility, and technological know-how and access. For instance, relevant pre-class materials are a key factor influencing students' motivation in flipped classrooms. When pre-class materials are connected and relevant to learning objectives, the students are more likely to engage with the materials and actively participate in subsequent in-class activities (Michelle, 2021). For learning independence and self-directiveness, the FC model provides students with greater independence over their learning process, which positively influences their motivation as they feel a sense of ownership and control over their learning.

Clear expectations and responsibility: Setting clear expectations and establishing responsibility helps students maintain motivation in FC. Clear expectation is a classroom management strategy that allows teachers to clearly define to students what is expected of them (Tim, 2020). Students must fully understand the rules, procedures, and academic expectations. Teachers can use various strategies, such as quizzes or reflective assignments, to hold students accountable for their engagement and participation. When students understand what is expected of them and how their efforts will be evaluated, they are more likely to be motivated to engage with materials given to them to study.

Technological know-how and access: As the FC model dramatically relies on technology to deliver pre-class materials, students' technological know-how and access to necessary resources can extensively influence their motivation. Technology plays an essential role in the flipped classroom approach by allowing students to explore concepts, solve problems, and receive timely feedback (Jingming, 2023). The use of technology such as multimedia resources, online discussions, and interactive activities in FC can foster motivation by making learning experiences more dynamic, engaging, and personalized for students. Lack of access to technology or limited technological skills may hinder students' motivation, especially during pre-class materials, leading to a decrease in their motivational level.

Advantages of Flipped Classroom Model

Previous research shows that the FC model promotes active learning, as students are required to engage with instructional materials before attending class (Masood et al., 2022). This model encourages students to take responsibility for their learning and fosters

a sense of ownership and motivation. Samaila et al (2024) in their research, reported that the FC model allows students to participate actively in discussions, problem-solving activities, and collaborative projects during class time. This can deepen their understanding of the subject matter, thereby developing problem-solving and critical-thinking skills (Bishop & Verleger, 2013).

Moreover, the FC model allows students to severally review and re-watch instructional materials multiple times, personalized learning or rewind videos, and seek clarification before attending class. This personalized learning experience enables students to grasp concepts more effectively, leading to improved academic performance (Strayer, 2012). Likewise, the FC model allows teachers to have more opportunities to interact with students individually or in small groups. With the lecture component moved outside of class time, teachers can dedicate more attention to addressing students' questions, providing immediate feedback, and offering personalized guidance. This increased interaction fosters a supportive learning environment, which positively impacts students' academic performance, engagement, and motivation (Bergmann & Sams, 2012).

Challenges of Flipped Classroom

The successful implementation of the FC model relies greatly on access to technology, self-discipline, effective time management skills, and reliable internet connectivity. Students from poor backgrounds or areas with limited resources may need help accessing the necessary technology, which hinder their ability to engage with pre-class materials (Samaila et al., 2021). Students who need help with technological barriers, self-discipline, or competing commitments may find it difficult to keep up with the FC model (Strayer, 2012).Samaila et al(2021)stated that one biggest challenges to FC is students' resistance to a new teaching mode. Students have become familiar with traditional lecture methods and struggle to adjust to an innovative teaching style with new routines, responsibilities and expectations. Another challenge is lack of motivation for pre-class work: Flipped classrooms face challenges in directing students to participate in pre-class learning activities, potentially reducing their effectiveness due to inadequate preparation, as teaching techniques heavily rely on pre-class tasks (Ng & Lo, 2022). Other challenges affecting the effectiveness of the FC model include poor power supply, technological know-how, limited digital literacy skills, and access to computers and internet connectivity (Samaila et al., 2021)

Objectives

The following objectives were formulated as follows:

1. To explore the factors influencing students' motivation in a flipped classroom
2. To investigate the advantages of using a flipped classroom model
3. To investigate the challenges students face in a flipped classroom model

Methodology

Given that qualitative research methodology helps researchers to explain experiences in a more detailed way (Silva, 2007; Lee, 2002), this study employed qualitative methods to assess students' responses. The qualitative study aimed to find out the factors influencing student's motivation in flipped classrooms using a semi-structured questionnaire and interview. The interviews helped to get in-depth information about the advantages and challenges of using the FC model.

The population of the study consists of 35 students who had earlier participated in the flipped classroom. The selected students were from Kebbi state university of Science and Technology, Aliero. A purposive sampling technique was used to select 20 students who were employed in achieving the objectives of this study.

Before the data analysis, experts in instructional technology validated the interview questions, and it was unanimously approved with minor corrections. However, to achieve reliability, the interview questions were carefully revised to ensure consistency. A thematic analysis method was used to analyze and interpret the data.

The study's findings were deliberated on three aspects; firstly, the factors affecting students' motivation in the FC model were discussed, secondly, the benefits of using the FC model were elaborated and thirdly, the challenges students face in a flipped learning environment were also discussed.

Factors influencing students' motivation in the FC model

The majority of the respondents acknowledged that they have participated in FC learning. Based on the interview results, students enjoy using short and precise pre-class materials. Students always feel motivated if the pre-class activities are accessible and understandable. However, only a few students were reported to have issues with the FC model because they needed more motivation and enough time to go through the pre-class materials due to their schedules at home. For instance, participant 3 stated that:

P3: "*I always postponed watching the videos given to me before class time due to their length. I always enjoy and engage watching pre-class materials that are short and precise*".

Results showed that engaging students in student-centered learning and self-directive learning encourages students during pre-class learning activities, thereby motivating students to have fruitful discussions during the in-class learning activities. Participant 1 stated that:

P1: "*I'm highly motivated with the FC model because i was given a chance to decide and learn at my own schedule. I have more control over my learning activities.*"

The findings of this study show that most students affirmed that the FC model positively influenced their overall learning performance by allowing them to take responsibility for their learning. This shows that engaging students in a learning process can motivate them to participate fully in the learning process. Participant 10 stated that:

P10: "*I feel motivated whenever a teacher assigns some tasks to me, especially during in-class activities*".

Similarly, most of the respondents affirmed that they had access to the necessary technologies required to have successful FC activities. The students acknowledge that technological know-how is among the primary factors influencing students' motivation in the FC model. Participant 7 stated that:

P7: "*I believe my technology skills assist me to get access to the learning materials from the student school portal. Having fewer challenges in ICT skills always motivate and give me more confidence to engage in technology-related approaches such as FC model, blended learning, and online learning*."

Advantages of using FC model

This study investigates the advantages of using the FC model. More than half of the students indicated that the new model supersedes the traditional methods of teaching because they have ample time to interact with their teachers and peers. The model allows them to interact with the materials given to them before class time, which keeps them motivated throughout the course work. Participant 6 stated that:

P6: "*I'm impressed with the FC model because I have enough time to interact with my teachers and learning materials even before the class hour*."

The majority of the students acknowledge that the FC model helps them develop their independent learning skills. These skills are certainly among the most valuable skills for any student to acquire, especially at high institutions where students are expected to study under less supervision. With the FC model, students access the initial information independently before the class hour. By doing that, students can get used to the process of self-study, and it allows them to learn at their own pace. Participant 13 stated that:

P13: "*I'm able to improve my independent learning skills. I can now study with little or no supervision*".

Another significant advantage of the FC model is that it assists the students in building a deeper understanding of the topic through re-watching of the video contents and active learning. This is different from the traditional method, which has more passive experience because students are actively involved in the learning process. Participant 12 stated that:

P12: "*I like FC model because it gives opportunity to watch and re-watch the video lectures and have the opportunity to involve in the knowledge construction*".

This study revealed that students are more comfortable with the FC model compared to the traditional method. This is because the FC model engages students with digital content at home, making them read and prepare before coming to class. This method of teaching opens ways for the students to be actively involved in classroom discussions.

P12: *"The idea of using the FC model is not only engaging the students, but making students to read and prepare while at home. This gives me opportunity to be actively involved in the classroom discussion".*

Challenges of Using the FC model

The main challenge reported by the students was that they needed more motivation to stay till the end of the online class. Some of the respondents affirmed that they faced unstable internet connection during FC, which did not give them the chance to participate fully in the online class. Participant 18 stated that:

P18:*"I feel tired watching video lectures, especially if the videos are lengthy. I need few and short lecture videos cause there is network problem".*

Students reported that sometimes they prefer the traditional method over the FC model because of the high demand for technology skills. Before using the FC model, students have adequate digital skills. This implies that if the students do not manipulate technology and navigate electronic devices, it will be difficult for them to participate and enjoy the FC model fully.

P16:*"I found it difficult to accommodate FC model because it requires high level of technology skills. This has always de-motivated me from using the FC model".*

Other challenges narrated by the participants include availability and access to computers and the internet, steady power supply, and lack of professional technical assistance. The availability and accessibility of computers and internet technology are critical for students to access online materials, as well as for teachers to deliver and manage them. The study revealed that students found it challenging to stay disciplined and manage their time in order to complete the online materials before class, as well as cope with increased cognitive demands in class. Participant 19 stated that:

P16:*"It was actually difficult for me to get access to computers and internet while at home. In addition, I have network and power issues which seriously block me from having online materials at home".*

Discussion

This study explores the factors influencing students' motivation in a flipped classroom and investigates the advantages and challenges of using the FC model. The findings of this study show that the perceived relevance of pre-class materials, learning independence, clear expectations, responsibility, technological know-how, and access to necessary resources extensively influences students' motivation in the flipped classroom. This concurs with previous studies that show that technological know-how is among the major factors affecting students' motivation in the FC model (Samaila et al., 2021). This study further contributes to the existing knowledge on flipped classrooms and provides necessary information to educators and curriculum designers on how to create a more engaging, personalized, and effective learning environment that can support a successful implementation of the FC model for better academic performance.

Results showed that the FC model is not only giving the students the opportunity to access the learning materials before the class hours but also encouraging them to participate in the learning process, thereby improving their engagement, participation, and learning outcomes. Likewise, literature disclosed that the FC model has numerous advantages over traditional methods. For example, Masood et al (2022) reported that with the emergence of the flipped classroom model, teachers continued to experience a significant improvement in learning achievement, engagement, and participation, mainly when the FC model was carefully implemented. A similar study reported that the advantages of the FC model include but are not limited to the improvement in students' learning outcomes, enhancing motivation if wisely implemented, creating independent learning skills, and building engaging lessons (Bishop &Verleger, 2013). This implies that both teachers and students should also be made to understand in detail the advantages of this learning model and how it can improve learning performance compared to the traditional lecture-based methods.

On the other hand, this study reported the challenges the students face while using the FC model. The challenges include lengthy lecture videos, internet connection, and limited digital literacy skills. This is the same as what Samaila et al (2021) found in his research, which found that lack of motivation and limited ICT skills are the main challenges affecting students' commitment to the FC model. Poor power supply, lack of professional technical assistance, and access to computers and the internet are some of the challenges students face in the flipped learning environment. Previous studies also mentioned similar challenges, which include poor knowledge of the FC model, lack of students' engagement during pre-class learning activities, students' poor digital literacy skills, and lack of students' interest in the FC model. This entails that for the FC model to be successful, these challenges need to be minimized or overcome. We can minimize these challenges by building up a supportive learning environment where teachers ought to respect and be patient with students, encourage, praise, and avoid being harsh on them (Jia & Xiuying, 2017). Teachers can achieve this by fostering a sense of belonging, encouraging collaboration, and promoting open communication to arouse students' interest in the FC.

Conclusion

This study explores the factors influencing student's motivation in the flipped classroom setting at the Kebbi State University of Science and Technology, Aliero, Nigeria. The results showed that the perceived relevance of pre-class materials, learning independence, clear expectations, responsibility, technological know-how, and access to necessary resources were the major factors affecting students' motivation in the flipped classroom setting. Despite the advantages of the FC model, there were many challenges students faced during the FC model. Multiple and dimensional actions need to be considered to overcome the challenges. For example, instant feedback, especially during pre-class learning activities, is a critical way to motivate students in the flipped classroom setting. This study was limited to a single Kebbi State University in Nigeria. It was suggested that further studies should be conducted in different Universities to include a larger population and sample size. The study used the qualitative method only. Further research should employ a mixed-method approach to access in-depth data.

Limitation and Recommendation

Due to the limited research sample, this study only covered students from Kebbi State University of Science and Technology, Aliero, and did not cover other populations as students from other institutions might have different opinions on factors that influence their motivation in a flipped classroom. Therefore, future research needs to be conducted to overcome the limitations.

Future research should include larger sample size to extend the scope to generalize the findings to other sets of students with similar characteristics. More so, institutions should integrate the use of flipped classroom in their instructions as well as instructors should adopt motivating strategies when using flipped classroom.

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