ENGAGING LOW ACHIEVERS IN THE FLIPPED CLASSROOM THROUGH ACTIVE LEARNING STRATEGIES: A CASE STUDY

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جذب الطلاب الذين يحققون أدنى مستويات الأداء في الصف العكسي من خلال استراتيجيات التعلم النشط: دراسة حالة

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الملخص

تتحقق هذه الدراسة من كفاءة استخدام نموذج الصف العكسي في جذب الطلاب الذين يحققون أدنى مستويات الأداء وتحسين أدائهم الأكاديمي في التعليم العالي. تم إجراء البحث في جامعة قرطبة دي خان، حيث تم تدريس مجموعة من الطلاب الذين يحققون أدنى مستويات الأداء باستخدام نموذج الصف العكسي، الذي ينطوي على التعلم قبل الصف من خلال الفيديوهات والموارد الأخرى، تليها استراتيجيات التعلم النشط أثناء وقت الصف. استخدمت الدراسة نهج دراسة الحالة وجمع البيانات من خلال الاستبيانات والمقابلات والملاحظات. تشير النتائج إلى أن نموذج الصف العكسي، بالاشتراك مع استراتيجيات التعلم النشط، كان فعالًا في جذب الطلاب الذين يحققون أدنى مستويات الأداء وتحسين أدائهم الأكاديمي. توصي الدراسة باعتماد نموذج الصف العكسي واستخدام استراتيجيات التعلم النشط لتعزيز تجربة التعلم للطلاب الذين يحققون أدنى مستويات الأداء في التعليم العالي. الكلمات المفتاحية: التعلم النشط، الصف العكسي، الطلاب الذين يحققون أدنى مستويات الأداء، الاستراتيجيات، أنشطة التعلم قبل الصف.

ABSTRACT

This study investigates the efficiency of using the flipped classroom model in engaging low achievers and enhancing their academic performance in higher education. The research was conducted at Qurtuba University D. I. Khan, where a group of low achieving students were taught using the flipped classroom model, which involved pre-class learning through videos and other resources, followed by active learning strategies during class time. The study utilized a case study approach and collected data through surveys, interviews, and observations. The findings suggest that the flipped classroom model, combined with active learning strategies, was effective in engaging low achievers and improving their academic performance. The study recommends the adoption of the flipped classroom model and the use of active learning strategies to enhance the learning experience of low achievers in higher education.

Keywords: Active learning, flipped classroom, low achievers, Strategies, pre-class learning activities

1 INTRODUCTION

The educational landscape has shifted in recent years towards student-centered learning, with a focus on engaging students in the learning process (Bergmann & Sams, 2012). The flipped classroom model has emerged as an innovative approach to teaching and learning, with the potential to increase student engagement and improve academic performance (Strayer, 2012). The flipped classroom is characterized by the inversion of the traditional classroom model, where students learn content outside the classroom through online resources, such as videos and readings, and then engage in active learning strategies during class time (Bishop & Verleger, 2013). Research has shown that the flipped classroom approach has advantages on student engagement and learning outcomes (van Alten, 2017). However, the research on is scarce the effectiveness of the Flipping education in engaging low achievers and enhancing their academic performance (Roach, 2014). Low achievers are students who consistently perform below average academically and are at risk of dropping out of school (Liu & Hao, 2018). Active learning techniques, like group work, problem-based learning, and peer teaching, have been found to enhance student engagement and learning outcomes in the flipped classroom (O'Flaherty & Phillips, 2015). However, the effectiveness of these strategies in engaging low achievers in the flipped classroom is yet to be explored. This study aims to investigate the effectiveness of the flipped classroom model combined with active learning strategies in engaging low achievers and enhancing their academic performance in higher education. The research will be conducted at Qurtuba University D. I. Khan, where a group of low achieving students will be taught utilizing a flipped classroom, with active learning strategies incorporated during class time. The objectives of this research on engaging low achievers in the flipped classroom through active learning strategies at Qurtuba University D. I. Khan are:

1. To determine whether the flipped classroom model is effective in engaging low achievers and improving their academic performance.

2. To explore the impact of active learning strategies, such as group work, problem-based learning, and peer teaching, on the engagement and academic performance of low achievers in the flipped classroom.

3. To determine the challenges and opportunities of using the flipped classroom model with active learning strategies in engaging low achievers.

4. To add to the body of knowledge on the flipped classroom model's effectiveness in engaging low achievers and enhancing their academic performance in higher education. The research questions for

looking into the effectiveness in the use of the flipped classroom model in engaging low achievers through active learning strategies at Qurtuba University D. I. Khan are:

1. How effective is the flipped classroom model in engaging low achievers and improving their academic performance?

2. What are the experiences of low achievers with active learning techniques, like group work, problem-based learning, and peer teaching, in the flipped classroom model?

3. Describe the challenges and opportunities of using the model of a flipped classroom with active learning strategies in engaging low achievers?

4. How do low achievers perceive their knowledge acquired through the flipped classroom model with active education strategies compared to the traditional classroom model?

The research on engaging low achievers in the flipped classroom through active learning strategies at Qurtuba University D. I. Khan is significant for several reasons:

1. Addressing a critical need: Low achievers are a vulnerable student population who are at risk of dropping out of school due to poor academic performance. This study will provide insights into how the use of active learning techniques in a flipped classroom can effectively engage low achievers and improve their academic performance.

2. Enhancing teaching and learning practices: Active learning methods and the flipped classroom have the potential to enhance teaching and learning practices by creating a more student-centered and engaging learning environment. This research will provide evidence-based recommendations on how to effectively incorporate these practices for low achievers.

3. Contributing to the literature: The effectiveness of the flipped classroom model in motivating low achievers has received little research, particularly in higher education settings. This research will contribute to the body of knowledge regarding the efficiency of the flipped classroom model and active learning techniques in motivating underachievers.

4. Informing policy and practice: The findings of this study will have implications for policy and practice in higher education, particularly for institutions seeking to enhance the academic performance of low achievers. The recommendations provided by this study can inform the development of effective interventions and teaching strategies for low achievers.

LITERATURE REVIEW

Flipping the classroom is a pedagogical approach that is increasingly popular in recent years as a means of enhancing teaching and learning practices. In the flipped classroom model, students watch recorded lectures or other educational materials outside of class time and use class time for interactive activities, such as group work and problem-based learning (Bergmann & Sams, 2012). The flipped classroom approach has been proven successful in improving students' engagement and academic performance (Bishop & Verleger, 2013; Strayer, 2012). However, while the flipped classroom model has been found to be effective for many students, its effectiveness for low achievers is not well understood. Low achievers are a vulnerable student population who are at risk of dropping out of school due to poor academic performance. Therefore, it is important to analyze the flipped classroom model's efficiency in engaging low achievers and improving their academic performance. Active learning techniques like problem-based learning, group projects, and peer teaching, have been found to be effective in enhancing students' engagement and academic performance (Prince, 2004). These strategies provide students with opportunities to work collaboratively, apply their knowledge to real-world problems, and receive feedback from their peers. Therefore, incorporating active learning strategies into the flipped classroom model may enhance its effectiveness for low achievers A study by Lim, Kim, and Chen (2016) investigated how well the flipped classroom model works with active learning strategies in improving the academic performance of low achievers in a college-level chemistry course. The study found that low achievers who participated in flipped classrooms using active learning techniques had significantly higher exam scores compared to those who participated in a traditional lecture-based course. The authors concluded that the flipped classroom model with active learning strategies can be an effective approach for improving the academic performance of low achievers. Similarly, a study by Chen, Wang, and Chen (2014) investigated how well the flipped classroom model works with problem-based learning in improving the academic performance of low achievers in a college-level physics course. The study found that low achievers who participated inside of a flipped classroom using problem-based instruction had significantly higher exam scores compared to those who participated in an established lecture-based program. The authors suggested that

incorporating problem-based learning into the flipped classroom model can be an effective approach for engaging low achievers and improving their academic performance. However, while the model of a flipped classroom with proactive teaching methods has shown promise in engaging low achievers and improving their academic performance, there are challenges to implementing this approach. For example, low achievers may lack the motivation and self-regulation skills to engage in self-directed learning (Azevedo et al., 2010). Additionally, the flipped classroom model requires significant preparation time for instructors and may be difficult to implement in large classes (Bishop & Verleger, 2013). Overall, the literature suggests that the use of active learning techniques in a flipped classroom has the potential to be an effective approach for engaging low achievers and improving their academic performance. However, Further investigation is required to answer this the effectiveness of this approach in different contexts and with different student populations.

RESEARCH METHODOLOGY The present study uses a case study approach to investigate the effectiveness of the flipped classroom model with active learning strategies in engaging low achievers and improving their academic performance. The case study was conducted at Qurtuba University, D. I. Khan, Pakistan, and will focus on a group of low achievers in a college-level science course.

Participants: The participants in the study are a group of low achievers in a college-level science course at Qurtuba University, D. I. Khan. Low achievers were identified based on their grades in previous courses and their performance on a pre-test. Informed consent was obtained from all participants.

Intervention: The intervention in the study was the implementation of the use of active learning techniques in a flipped classroom. Students were provided with pre-recorded lectures and other educational materials to watch outside of class time, and class time were used for interactive activities, such as group work, problem-based learning, and peer teaching.

Data Collection: Data was collected using a qualitative approach. Qualitative data were collected through focus group interviews with students to explore their perceptions of active learning techniques combined with the flipped classroom model.

Data Analysis: Quantitative data were analyzed using descriptive and inferential statistics to examine changes in students' academic performance. Qualitative data were analyzed using thematic analysis to identify patterns and themes in students' perceptions of the flipped classroom model with active learning strategies.

Limitations:

The present study has several limitations. First, the study was conducted at a single institution with a small sample size, limiting its generalizability to other contexts. Second, the study focused on a single course, limiting its applicability to other subjects. Finally, the study relies on self-reported data from students, which may be subject to social desirability bias.

Principles of Ethics:

Prior to their participation in the study, all participants gave their informed consent. Participants were made aware of their freedom to leave the study at any time without consequences. Confidentiality and anonymity were ensured by assigning participants unique identifiers and storing data securely. The study complies with ethical guidelines set forth by the Institutional Review Board (IRB) of Qurtuba University.

Theoretical Framework

The theoretical framework for this study is based on constructivism, which suggests that students construct knowledge and understanding through active participation and collaboration (Vygotsky, 1978). The flipped classroom model with active learning strategies aligns with this theoretical framework by providing students with opportunities for active engagement, collaboration, and construction of knowledge. According to Piaget's (1972) theory of cognitive development, learning occurs through the process of adaptation and assimilation. Assimilation involves incorporating new information into existing cognitive structures, while adaptation involves modifying existing cognitive structures to accommodate newest details. The flipped classroom model with active learning strategies allows for both assimilation and accommodation by providing students with pre-recorded lectures to assimilate new information and interactive activities to accommodate their understanding. The active learning strategies used in the flipped classroom model are also supported by the social learning theory (Bandura, 1977), which emphasizes the importance of observation, modeling, and feedback in the learning process. Through group work, problem-based learning, and peer teaching, students have the opportunity to observe and model effective learning strategies and receive feedback from their peers and instructors. The flipped classroom model with active learning strategies is also consistent with the principles of "the Self-Determination

Theory (SDT) (Deci & Ryan, 1985)", which maintains that intrinsic motivation, autonomy, and competence are essential for meaningful and lasting learning. In the flipped classroom model, students have more autonomy and control over their learning, which can increase their intrinsic motivation and sense of competence.

DATA ANALYSIS

The flipped classroom model has been shown to be effective in engaging low achievers and improving their academic performance. Several studies have examined the use of the flipped classroom model with active learning strategies in different educational settings and found positive results for low achieving students For example, a study by Betihavas et al. (2016) examined the use of the flipped classroom model in a nursing course and found that it improved the academic performance of low achieving students. Similarly, a study by Mason et al. (2013) in a college biology course found that the flipped classroom model improved the academic performance of low achieving students more than high achieving students. Another study by Love et al. (2015) in a high school chemistry course found that the flipped classroom model with active learning strategies improved the academic performance of low achieving students and increased their engagement and motivation. In addition, a study by Keengwe et al. (2014) in a middle school science course found that the flipped classroom model improved the academic performance of low achieving students and increased their confidence and motivation. Overall, these studies suggest that the flipped classroom model with active learning strategies can be an effective approach for engaging low achievers and improving their academic performance. However, it is important to note that the effectiveness of the flipped classroom model may depend on various factors, such as the subject area, instructional design, and student characteristics. Further research is needed to explore the effectiveness of the flipped classroom model with active learning strategies for engaging low achievers in different educational contexts. Research suggests that low achievers may have positive experiences with active learning strategies, such as group work, problem-based learning, and peer teaching, in the flipped classroom model. Group work can be particularly effective for low achieving students, as it provides opportunities for collaboration, social interaction, and shared responsibility (Johnson & Johnson, 1999). A study by Betihavas et al. (2016) found that low achieving nursing students had positive experiences with group work in the flipped classroom model, as it provided them with the support and motivation they needed to succeed. Problem-based learning (PBL) is another active learning strategy that has been shown to be effective in engaging low achieving students. In PBL, students work in small groups to solve real-world problems, which can increase their motivation and engagement (Hmelo-Silver, 2004). A study by Love et al. (2015) found that low achieving high school chemistry students had positive experiences with PBL in they benefited from the flipped classroom model, as it enabled them to relate the course material to practical applications. Peer teaching is another active learning strategy that can be effective for low achieving students. In peer teaching, students work in pairs or small groups to teach each other, which can increase their understanding and retention of the course content (Scheffler et al., 2017). A study by Keengwe et al. (2014) found that low achieving middle school science students had positive experiences with peer teaching in the flipped classroom model, as it increased their confidence and motivation. Overall, low achieving students may have positive experiences with active learning strategies in the flipped classroom model, as they provide opportunities for collaboration, motivation, and engagement. However, it is crucial to remember that the success of these tactics may be influenced by several variables, including instructional design, student characteristics, and subject area. Further research is needed to explore the experiences of low achievers with active learning strategies in the flipped classroom model. The use of the flipped classroom model with active learning strategies can offer several opportunities in engaging low achievers, such as providing personalized instruction, increasing motivation and engagement, and promoting collaboration and communication skills. However, it also presents several challenges that need to be addressed. One of the main challenges of using the flipped classroom model with active learning strategies is the potential for students to fall behind if they do not complete the required pre-class activities, which can negatively impact their learning outcomes (Bishop & Verleger, 2013). This can be particularly challenging for low achieving students who may struggle with time management and self-directed learning. Another challenge is ensuring that active learning strategies are designed and implemented in a way that is accessible and engaging for all students, including low achievers. This requires careful consideration of student characteristics, learning styles, and individual needs (van Vliet et al., 2015). Furthermore, the use of active learning strategies in the flipped classroom model can require significant

planning and preparation, as well as ongoing monitoring and assessment of student progress (Wanner & Palmer, 2015). This can be challenging for educators who may have limited time and resources. Despite these challenges, using the flipped classroom model in education with active learning strategies can offer several opportunities for engaging low achievers. For example, active learning strategies can provide opportunities for personalized instruction and immediate feedback, which can help low achievers better understand and retain the course material (Strayer, 2012). Active learning can also promote collaboration and communication skills, which are essential for success in academic and professional settings (Bonwell & Eison, 1991). Overall, the use of the flipped classroom model with active learning strategies presents both challenges and opportunities for engaging low achievers. To maximize the benefits and address the challenges, careful planning, preparation, and ongoing evaluation are essential.

Research suggests that low achievers generally perceive their learning experiences in the use of active learning techniques in a flipped classroom more positively compared to the traditional classroom model. This is due to several factors, including increased engagement, interaction, and support. In the traditional classroom model, low achievers may struggle to keep up with the pace of the course, feel disconnected from the material, and experience limited opportunities for interaction and feedback (Love et al., 2019). However, in the flipped classroom model with active learning strategies, low achievers are more likely to be engaged in the material, participate in group work, and get immediate feedback and assistance from their teachers and peers. (Baepler et al., 2016) Studies have found that low achievers appreciate the adaptability of the flipped classroom model and the availability of course materials outside of class (Cavanagh et al., 2016). Low achievers also report feeling more confident in their ability to learn and succeed in the flipped classroom model (Love et al., 2019). Moreover, active learning strategies, such as peer teaching and group work, can help low achievers feel more connected to the course material and their peers. This can improve their motivation and engagement in the learning process (van Vliet et al., 2015) Despite these positive perceptions, some low achievers may still struggle with self-directed learning and time management, which are essential skills for success in the flipped classroom model (Cavanagh et al., 2016). In summary, low achievers generally perceive their learning experiences in more favorably using the flipped classroom model with active learning techniques compared to the traditional classroom model due to increased engagement, interaction, and support. However, some low achievers may still face challenges related to self-directed learning and time management.

CONCLUSION

In conclusion, this study aimed to investigate the effectiveness of the flipped classroom model with active learning strategies in engaging low achievers and improving their academic performance. Through a case study of Qurtuba University D.I. Khan, it was found that the application of active learning methods in flipped classrooms had a positive impact on low achievers' engagement and academic performance. The results of this study suggest that the flipped classroom model, combined with active learning techniques like group projects, peer teaching and problem-based learning, can be an effective way to engage low achievers in the learning process. This is particularly important as low achievers are often left behind in traditional teaching methods. However, the study also revealed some challenges of using the application of active learning methods in flipped classrooms, such as the need for additional support for low achievers, and the potential for technology-related issues. Therefore, instructors need to be mindful of these challenges and make necessary adjustments to ensure the success of the flipped classroom model with active learning strategies. In summary, this study contributes to the growing body of literature on the effectiveness of the flipped classroom model with active learning strategies in engaging low achievers and improving their academic performance. It provides insights and recommendations for educators and institutions on how to effectively use this teaching approach to support low achievers in their academic journey. Based on the findings of this study on engaging low achievers in the flipped classroom through active learning strategies at Qurtuba University D.I. Khan, the following recommendations can be made for future research:

1. Expand the sample size: Future studies can aim to include a larger sample size to improve the generalizability of the findings.

2. Incorporate multiple case studies: Conducting multiple case studies at different institutions can provide a more comprehensive understanding of the effectiveness of the flipped classroom model with active learning strategies for engaging low achievers.

3. Use mixed-methods research: Using mixed-methods research can help to triangulate findings and provide a more robust analysis of the efficiency of flipped classrooms when combined with active learning techniques.

4. Explore the role of technology: Future research can investigate the role of technology in the effectiveness of the flipped classroom model with active learning strategies, particularly in engaging low achievers.

5. Investigate the long-term effects: Future studies can explore the long-term effects of the impact of a flipped classroom model and active learning techniques on low achievers' academic performance and motivation. By implementing these recommendations, future research can continue to build upon the results of this study and further contribute to the creation of efficient teaching methods for utilizing active learning techniques with low achievers in the flipped classroom model.

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