THE IMPACT OF A FLIPPED CLASSROOM ON STUDENTS SELF-REGULATION IN PRIMARY EDUCATION

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ABSTRACT

The research examines the impact of flipped classrooms students' self-regulation of sixth- and fifth-grade students at SD Citra Berkat The Taman Dayu. The goal of the research is to determine how the flipped classroom approach affects students' ability to self-regulate by combining quantitative and qualitative analysis, identifying patterns, and making interpretations based on the findings. The research involves a survey of 52 elementary school students to evaluate self-regulation and perceptions of the flipped classroom. The findings are presented through interviews, observations, and surveys, indicating positive outcomes such as improved self-regulation, increased understanding of concepts, and enhanced student motivation to learn. The research's findings indicate that the implementation of the flipped classroom approach may enhance student self-regulation by providing opportunities for independent learning, time management, and task organization, ultimately enhancing academic achievement and understanding of concepts. The finding point to the flipped classroom approach's potential advantages for encouraging student involvement and self-regulation.

Keywords: *flipped classroom, self-regulation, primary education.*

INTRODUCTION

In the rapidly changing landscape of education, characterized by the advent of the 5.0 era, a common challenge emerges: equipping students with the skills necessary to excel in an increasingly decentralized and technology-driven society (Hasanah, A, & Haryadi, H, 2022). This necessitates a transition towards self-directed learners equipped with the tools and strategies to self-direct their learning journey (Williamson, S., 2007). However, traditional education systems often fall short of fostering these crucial skills (Feinberg, W., 1997). In Indonesia, this challenge is reflected in the ongoing transformation of its education system. Recognizing the limitations of standardized approaches, the government introduced the Merdeka Curriculum, empowering schools to tailor learning experiences to their unique contexts (Rohimat, Sanusi & Munthahanah, 2022).

This opens doors for innovative practices like flipped classrooms, where students engage with learning materials independently before classroom discussions and activities. In addition to flipped classrooms, additional innovative techniques that may be adopted under the Merdeka Curriculum include project-based learning, individualized learning plans, and collaborative learning communities. Project-based learning encourages students to participate in real-world problem-solving and build critical thinking abilities (Bullen, 2012). Personalized learning plans give students the option to establish their own learning objectives and speed (Chen & Chang 2018).

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Collaborative learning communities enhance communication and collaboration skills through group projects and discussions (Allen & Bernhardt, 2011).

The Merdeka Curriculum, introduced by the Indonesian government in 2022, empowers schools to tailor learning experiences to their unique contexts. This research delves into the potential of flipped classrooms to address a critical aspect of independent learning: self-regulation. Within SD Citra Berkat, we explore how this innovative approach can empower students in the fifth and sixth grades to manage their learning effectively, set meaningful goals, and confidently navigate their educational journey. This innovative initiative deviates from standardized models, empowering schools like SD Citra Berkat to design learning experiences that align with their unique contexts and student needs. The curriculum emphasizes student agency, encouraging them to actively participate in their learning journey. This focus on independence necessitates the development of strong self-regulation skills, enabling students to effectively manage their time, set goals, and monitor their progress.

Recognizing the potential of fostering independent learning, schools like SD Citra Berkat embrace innovative approaches. This educational facility, which is located in Taman Dayu, continually seeks for creative ways to encourage independent study. Recognizing the importance of self-regulation, SD Citra Berkat leadership is particularly interested in exploring its potential enhancement through the implementation of flipped classrooms. This research aligns with their vision, making it an ideal environment to explore the relationship between flipped classrooms and student self-regulation.

In today's educational landscape, where independent learning takes center stage, self-regulation emerges as an indispensable skill (Arce, 2013). It empowers students to navigate their learning journey, taking ownership of their goals, progress, and strategies. This ability to manage cognitions, emotions, and behaviours is not only crucial for academic success but also fosters autonomy and adaptability, essential qualities for lifelong learners (Lee, & Hannafin, 2016).

Independent learning hinges on students taking the reins of their education and navigating their journey without constant supervision (Ismailova & Tokhtaganova, 2022). This is where self-regulation becomes crucial, equipping them with the tools to chart their course effectively. Strong self-regulation empowers students to set clear, achievable goals aligned with their abilities and aspirations (Schunk, 1990). They may then apply different approaches, such self-assessment and reflection, to evaluate progress, identify areas for development, and adapt their strategy appropriately. This ensures they stay on track and overcome challenges by adapting their approach when needed.

Effective self-regulation also involves efficiently managing time and prioritizing tasks, ensuring they cover all the material without feeling overwhelmed (Hofmann, Schmeichel, & Baddeley, 2012). In an environment filled with distractions, students with strong self-regulation can control their attention and stay focused on their learning objectives, avoiding unproductive behaviors. In essence, self-regulation equips students to become independent, motivated, and adaptable learners, ready to thrive in today's dynamic learning landscape (Zimmerman, 2008).

Self-regulation offers benefits beyond academic achievement (Dörrenbächer & Perels, 2016). Students who develop strong self-regulation skills become independent learners, demonstrating self-reliance and confidence (Zimmerman, 2008). Without the constant need for outside direction, individuals take on obstacles head-on and develop a sense of accountability and ownership for their studies. This newfound independence sparks intrinsic motivation, as setting and achieving personal goals fuels a desire for self-improvement and deeper engagement in the learning process. Moreover, self-regulation empowers students with the adaptability required to succeed in an ever-changing world. By enabling them to navigate unfamiliar learning environments, embrace diverse teaching styles, and overcome unexpected challenges, self-regulation fosters flexibility and problem-solving skills that extend far beyond the classroom (Schraw, 2006).

For educators, nurturing self-regulation in students unlocks a treasure trove of benefits (Paris, S & Paris, A, 2001). Firstly, incorporating self-regulation strategies fosters student ownership and engagement, leading to a vibrant learning environment with improved outcomes. Secondly, empowered self-regulators require less direct supervision, freeing educators to provide personalized support and delve deeper into learning experiences. Lastly, understanding self-regulation allows educators to tailor their teaching to individual needs and learning styles, promoting effective and personalized learning for all. By nurturing self-regulation, educators unlock a powerful tool for creating a dynamic and successful learning environment for both themselves and their students.

The key to unlocking independent learning lies in self-regulation. The student's ability to chart their own course. Understanding its characteristics and benefits empowers both students and educators to create a more engaging and successful learning journey (Taufik, 2019). Students equipped with self-regulation become autonomous and effective navigators, establishing objectives, reviewing progress, and modifying techniques as required (Zimmerman & Martinez-Pons, 1988). This self-directedness fuels motivation, fosters adaptability, and builds confidence. For educators, understanding self-regulation allows for tailoring teaching approaches to individual needs, creating a vibrant learning environment with less direct supervision and deeper learning experiences (Schraw, G., Crippen, K., & Hartley, K., 2006). By working together to harness this powerful tool, students and educators can build a self-directed learning landscape that empowers success for all.

The flipped classroom methodology, where students engage with learning materials independently before in-class activities, has garnered increasing attention in recent years. Research suggests its potential to enhance various learning skills, including creativity, responsibility, and critical thinking (Rotellar & Cain, 2016). Moreover, Öztürk, and Çakıroğlu, (2021) revealed the favourable influence of flipped classrooms on learning outcomes in English language classes. There is still a big hole, though: not much empirical research has been done on how flipped classrooms affect students' ability to self-regulate (Al-Abdullatif, 2020). Our current research attempts to fill this gap and add significant insights to the corpus of information already in existence. This gap serves as the basis for our work.

As we navigate the complexities of the 5.0 era, education faces a critical challenge: equipping students with the skills to thrive in an increasingly independent and technology-driven environment (Nugraha & Rahman, 2021). This demands a shift towards fostering independent learners who can effectively manage their learning journey. While the Merdeka Curriculum offers a promising framework for achieving this goal, a crucial gap remains in understanding how innovative approaches like flipped classrooms can specifically support the development of self-regulation—the ability to manage cognitions, emotions, and behaviours in pursuit of learning goals.

The current study at SD Citra Berkat The Taman Dayu aims to investigate how the flipped classroom approach affects students' self-regulation in the fifth and sixth grades. It specifically addresses the challenge of student confusion regarding the learning material presented by teachers, as identified in preliminary research. By implementing a flipped classroom approach, we hope to ensure students grasp learning objectives and cultivate high motivation, ultimately leading to improved self-regulation.

Preliminary data from a survey conducted during the 2022–2 school year highlights the need for this research. The survey revealed that only a small percentage of students feel they receive clear information about learning materials. Implementing flipped classrooms may solve this problem by ensuring students obtain a good knowledge of learning goals before classroom discussions and activities. Additionally, by encouraging student enthusiasm and involvement, this method may help them become more self-reliant.

It is crucial to note that the flipped classroom approach will be the main intervention in this study, which will concentrate on the fifth and sixth grade children at SD Citra Berkat The Taman Dayu. While the research

holds promise for improving self-regulation, further investigation may be needed to explore its long-term effects and potential application across different grade levels and educational contexts.

By addressing this crucial gap and exploring the potential of flipped classrooms, the current research aims to provide significant insights to the field of education. We hope to inform educators seeking to effectively implement flipped classrooms and ultimately empower primary students to navigate their learning journey with confidence and self-directedness.

Self-regulation

The ever evolving 21st century demands a new generation of learners: individuals equipped with self-directedness, critical thinking, and the capacity to control their own learning effectively (Mishra, P., el., 2013). This concept, known as self-regulation, has become a central focus in educational research and practice. This review delves into the existing literature on self-regulation, exploring its definition, key components, and its impact on learning outcomes, particularly within the context of innovative educational approaches.

Self-regulation involves a diversity of cognitive, emotional, and behavioural processes that allow people to manage their thoughts, emotions, and behaviours to attain particular learning objectives. It includes several interrelated components, for instance, metacognition, goal setting, planning, organizing, and self-reflection, which are necessary for effective learning (Jabusch, 2016). According to Barfurth (2009), metacognition is the cognitive awareness and comprehension of one's own learning processes and capacities. Goal setting: Establishing clear, achievable, and relevant learning objectives (Moeller, 2012). Planning and organization: developing strategies and managing time effectively to achieve learning goals (Hadwin & Winne, 2012). Self-monitoring: regularly evaluating progress and making adjustments to learning strategies as needed (McMillan & Hearn, 2008). Motivation and self-efficacy: sustaining motivation and conviction in one's capacity to achieve (Pajares, 2012).

Impact of Self-Regulation: Extensive research has demonstrated a positive correlation between self-regulation and various educational outcomes. Students with strong self-regulation skills tend to demonstrate higher academic achievement, increased motivation, and greater independence in their learning (Morosanova, V, 2014). In addition, self-regulation has been linked to improved critical thinking skills, problem-solving abilities, and adaptability in diverse learning environments (Zimmerman, 2015).

Flipped Classroom

The traditional model of education, with teachers delivering information and students passively receiving it, faces increasing criticism in the 21st century (Smart, Witt, & Scott, 2012). In response, innovative approaches like the flipped classroom are gaining traction, aiming to foster more active and independent learning. In a flipped classroom, the typical classroom structure is inverted. Students first engage with learning materials independently, often at home, through videos, readings, or online activities (Rotellar, & Cain, 2016). This pre-class preparation permits classroom time to be allocated for more actively participating and interesting activities, such as discussions, problem-solving, and collaborative projects. This shift helps students take initiative for their learning and develop essential abilities, including independent thinking, self-regulation, and teamwork (Critz & Knight, 2013).

One possible advantage of flipped classes is enhanced engagement and motivation among students. By actively engaging in classroom activities and conversations, students become more engaged with the topic and gain better comprehension. This approach also helps improve critical thinking and problem-solving skills, as flipped classrooms often focus on applying knowledge through projects and discussions. Additionally, working collaboratively on projects and activities in a flipped classroom setting enhances students' collaboration and

communication skills. It allows them to develop important teamwork and interpersonal skills that are essential in the real world. Furthermore, flipped classrooms may be customized to accommodate particular learning styles and demands, making them a suitable approach for differentiated instruction. As students take charge of their own learning process and become more self-directed in their studies, this individualized learning experience increases their sense of ownership and responsibility (Hwang, Lai, & Wang, 2015).

Implementing a flipped classroom model comes with its significant amount of challenges and considerations. One significant concern is the issue of technology access and equity. Not all students may have reliable access to technology or the internet, which could hinder their participation in flipped classrooms. Another challenge lies in teacher training and workload. Flipped classrooms require teachers to take on a more facilitative role and adapt their teaching approach. This transition may require professional development and additional time for teachers to effectively implement the flipped classroom model. Furthermore, initial student resistance is a common hurdle when introducing flipped classrooms. Shifting from a traditional, passive learning environment to an active one can be met with resistance from students who are accustomed to a more traditional approach. It may take time for students to adjust and fully embrace the new learning method. Overall, while flipped classrooms have the potential to enhance student engagement and learning outcomes, careful consideration must be given to the challenges and considerations involved in implementing this innovative teaching approach.

Studies have yielded mixed results regarding the effectiveness of flipped classrooms. Some studies have shown positive impacts on learning outcomes, student engagement, and critical thinking skills (McLaughlin, 2018). However, other studies have reported minimal or inconsistent effects (Chen, Lui, & Martinelli, 2017). While the research suggests promise, the effectiveness of flipped classrooms appears to depend on various factors, including implementation fidelity, teacher preparation, and student characteristics.

While the flipped classroom is not a panacea for all educational challenges, it represents a promising approach to fostering active and engaged learning. With careful preparation, teacher training, and continuous study, the flipped classroom may provide useful tools for educators striving to encourage students to become self-directed learners in the 21st century.

Flipped Classrooms in Primary Education

Flipped classrooms in primary education offer various benefits for students and teachers alike. By engaging with pre-recorded lessons or online materials before class, students gain flexibility and control over their learning activities. Flipped classrooms develop a feeling of responsibility and self-directedness, key abilities for lifelong learners. Moreover, the flipped classroom paradigm gives new prospects for individualized education, enabling instructors to accommodate individual needs and learning styles by offering tailored help throughout class sessions. However, implementing a flipped classroom model in primary education comes with its significant amount of challenges. Equal access to and use of technology is a major concern. A student's ability to participate in flipped classrooms may be hampered by their lack of consistent access to technology or the internet. Another challenge lies in teacher training and workload. Flipped classrooms require teachers to take on a more facilitative role and adapt their teaching approach. This transition may require professional development and additional time for teachers to effectively implement the flipped classroom model. Furthermore, initial student resistance is a common hurdle when introducing flipped classrooms. There may be opposition from students used to a more traditional method when they go from a traditional, passive learning environment to an active one. It may take time for students to adjust and fully embrace the new learning method (Luan, & Bakar, 2008).

Self-Regulation and Flipped Material

In today's dynamic educational landscape, innovative approaches like flipped classrooms and project-based learning are gaining traction. These methods emphasize student autonomy and active participation, placing greater responsibility on students to manage their learning. This shift necessitates fostering strong self-regulation skills to navigate the increased independence effectively.

Flipped classrooms are a method of learning that has evolved rapidly in recent years. In a flipped classroom, students watch videos or use other learning resources to study the content before class, and then use class time to discuss and apply what they have learned. The objectives of this technique are to provide pupils the chance to learn on their own, improve their conceptual knowledge, and hone their self-control.

Prior studies on the use of flipped classrooms have demonstrated beneficial effects on enhancing students' self-regulation. For instance, students in the flipped classroom have higher self-ability in managing their time, optimizing learning resources, and organizing their assignments, according to a study by Namaziandost and Çakmak, (2020). This research shows the potential of flipped classrooms for improving student self-regulation.

Additionally, research by Wei, (2020) indicated students who participated in flipped classroom learning paradigm had a substantial increase in their academic ability in mathematics. This shows that the flipped classroom method may also promote student involvement and knowledge, which are crucial components of self-regulation. In addition, research also reveals that self-regulation plays a key role in kids' academic achievement. According to research by Schunk, (2005), kids with high levels of self-regulation typically exhibit higher levels of motivation to learn, better learning outcomes, and improved problem-solving skills.

Several studies have explored the potential of flipped classrooms to enhance self-regulation. For instance, Mulhim, (2021) found that students in flipped classrooms demonstrated improved self-regulation skills, as measured by their ability to set goals, plan learning activities, and monitor their progress. Similarly, Zhao, et al. (2021) reported a positive association between flipped classrooms and increased student self-efficacy and motivation, key components of self-regulation. However, a critical gap remains in the existing literature. While research suggests the potential benefits of flipped classrooms for self-regulation, further investigation is needed to understand the specific mechanisms through which this impact occurs. Additionally, exploring the long-term effects of flipped classrooms on self-regulation and its generalizability across diverse educational contexts would be valuable contributions.

Self-regulation stands as a crucial skill for thriving in the 21st-century learning landscape. By understanding its definition, key components, and impact on learning outcomes, educators can design and implement effective strategies to foster self-regulation in their students. Innovative approaches like flipped classrooms hold promise for supporting self-regulation development; however, greater study is required to properly grasp their processes and wider application. Prioritizing the development of self-regulation will enable students to become independent, lifelong learners equipped for the opportunities and difficulties of their futures, as educators continue to investigate and improve these cutting-edge teaching strategies.

RESEARCH METHOD

An investigation into how the flipped classroom approach affected students' ability to self-regulate was conducted using a mixed method approach. First, the fifth and sixth grade students at SD Citra Berkat, The Taman Dayu, were given a quantitative survey to complete. Students' evaluations of the self-regulation skills and intelligibility of the learning materials were analyzed through the survey. To gain a deeper understanding of the implementation and efficacy of the flipped classroom technique, qualitative data was also gathered through

student observations and instructor interviews. It was possible to thoroughly assess how flipped classrooms affect students' self-regulation because of the mix of quantitative and qualitative data. The use of the flipped classroom approach is the research independent variable. The flipped classroom paradigm has been implemented in the target classes, as described below.

During class, students worked individually with the learning materials before participating in interactive and group activities. The dependent variable is student self-regulation, assessed using different instruments and procedures. The target population for this study encompassed eight teachers in the fifth and sixth grades at SD Citra Berkat and 52 students enrolled in the respective grades. A representative sample was selected from this population to ensure the generalizability and feasibility of the study. The study was conducted over one-semester period, starting from July 2023 to December 2023.

During this period, sufficient data were gathered and analyzed to show how the flipped classroom intervention affected students' ability to regulate their behavior during the semester. To acquire thorough data for this study, a mix of questionnaires, observations, and interviews were conducted. Teachers and students participated in semi-structured interviews to learn more about their viewpoints and experiences with the flipped classroom approach and its effects on self-regulation. Additionally, classroom observations were also conducted to document and analyze student engagement, participation and self-regulation behaviours during flipped classroom sessions. To measure the effectiveness of the flipped classroom intervention, standardized questionnaires were administered to students before and after the intervention, focusing on their self-regulation skills.

This multi-method approach provided full knowledge of the relationship between the flipped classroom method and students' self-regulation. To provide educators and researchers with important insights into promoting independent learning in the current educational environment, this study aims to obtain a comprehensive understanding of the relationship between flipped classrooms and student self-regulation using a mixed-method approach and a variety of research instruments.

Procedures

This study employed a mixed-method approach to data gathering, integrating qualitative and quantitative methods to obtain deep and nuanced knowledge (Ågerfalk, 2013) of the influence of flipped classrooms on student self-regulation. Semi-structured interviews were conducted with eight teachers in the fifth and sixth grades, delving into their experiences and perspectives on the flipped classroom technique and its influence on student self-regulation.

In addition, observations in the class were conducted to document student engagement, participation, and self-regulation behaviours during the flipped classroom sessions. To quantitatively measure changes in self-regulation, standardized questionnaires were administered to 52 students in the fifth and sixth grades before and after the flipped classroom intervention. The quantitative data provided a broader picture of the overall impact on the student population.

During the semester, teachers implemented the flipped classroom method, providing learning materials through videos or online platforms for students to access independently before class. The class time was then dedicated to discussions, assignments, and application of the concepts learned. The teachers also conducted observations throughout the process. In December 2023, the researchers revisited the teachers for follow-up interviews to compare their initial and final observations and perspectives.

Additionally, the post-intervention student surveys were analyzed to assess changes in self-regulation scores. By comparing the initial and final data from both qualitative and quantitative sources, this study aimed to

identify a potential link between the flipped classroom method and improved student self-regulation skills. This multifaceted data collection approach provided a comprehensive understanding of the impact of flipped classrooms, offering valuable insights for educators and researchers interested in fostering independent learning through innovative teaching methods.

Data Analysis

To glean a comprehensive understanding of flipped classrooms' influence on student self-regulation, this research employs a mixed-methods approach, weaving together qualitative and quantitative threads. In-depth interviews with eight fifth and sixth grade teachers will unravel their experiences and perspectives on the flipped classroom and its perceived impact on self-regulation. Classroom observations will further enrich the picture by capturing student engagement, participation, and self-regulation behaviours during these sessions.

On the quantitative side, standardized questionnaires will be administered to 52 students in the fifth and sixth grades, both before and after the flipped classroom intervention. This data will provide a broader view of the overall impact on the student population by measuring changes in self-regulation scores.

The research journey doesn't end there. During the semester, teachers will actively implement the flipped classroom method, offering learning materials through videos or online platforms for students to access independently before class. Class time was then transformed, focusing on discussions, assignments, and applying the learned concepts. Throughout this process, teachers will also conduct observations to capture valuable insights.

After the semester's immersive research experience, researchers will revisit the teachers for follow-up interviews, contrasting their initial and final observations and perspectives. The post-intervention student surveys will also be rigorously analysed to gauge changes in self-regulation scores. By meticulously comparing the initial and final data from both qualitative and quantitative sources, the research aims to identify a potential link between the flipped classroom method and improved self-regulation skills in students.

This multifaceted data collection approach promises to unlock a comprehensive understanding of the flipped classroom's impact, offering invaluable insights for educators and researchers passionate about fostering independent learning through innovative teaching methods. It holds the potential to illuminate a path towards empowering students to become self-directed learners, ready to thrive in the ever-evolving landscape of education.

FINDINGS AND DISCUSSION

Findings

This research delves into the influence of flipped classrooms on student self-regulation at the fifth and sixth grades. By combining qualitative and quantitative data, the research paints a compelling picture of the benefits and contributing factors associated with this innovative learning approach. Interviews and observations with teachers revealed a positive outlook on the flipped classroom method. Stepping into flipped classrooms, eight teachers in the fifth and sixth grades discovered a wide range of advantages. Their resounding support, revealed through interviews, highlights the positive impact on both students and their own teaching practices. Firstly, flipped materials empowered students to come to class better prepared, fostering a more efficient learning environment. This shift freed up valuable time for deeper discussions, engaging activities, and personalized support. The "entrance ticket" approach proved especially valuable for teachers, offering a quick snapshot of student understanding, and allowing them to tailor materials or instruction accordingly. This flexibility addressed a longstanding challenge - students often lacked prior knowledge, hindering learning before the flipped classroom intervention. Consistency was key, with teachers diligently providing flipped materials on schedule or adapting them to meet specific needs. This ensured students were well-equipped for independent learning, setting the stage

for success. Overall, these interview results paint a promising picture, suggesting that the flipped classroom design can be a valuable tool for enhancing student preparation, boosting learning efficiency, and catering to individual needs, ultimately leaving teachers feeling empowered and students on a path to deeper understanding. These findings align with previous research highlighting the beneficial impact of flipped clasroom on students' self-regulation (Doman & Webb, 2017; Yoon, et al, 2021; Jdaitawi, 2019; Lai & Hwang, 2016).

To quantitatively measure changes in self-regulation, a standardized questionnaire using a Likert scale was administered to 52 in the fifth and sixth grade students before implementing the flipped classroom model. The survey assessed both their pre-existing abilities in self-regulation and their perception of the flipped classroom approach. While 68% of students felt they received clear learning objectives, suggesting a decent understanding of what was expected, only 64.9% reported feeling motivated to learn from the flipped materials. This reveals potential for improvement in fostering a sense of ownership and enthusiasm for independent learning, areas crucial for effective self-regulation. These initial findings provide valuable insights as educators refine their flipped classroom approach to better support students in developing the essential skills for self-directed learning (Lai & Hwang, 2016).

Observations validated the effective use the flipped classroom technique. Every teacher (100%) provided readily accessible learning materials in the form of engaging videos or online tools, ensuring students could prepare effectively at home. Consistency reigned supreme, with teachers (100%) meticulously adhering to planned schedules and keeping both students and parents informed about upcoming flipped materials. Clarity was paramount, with all teachers (100%) presenting materials in a way that resonated with students, fostering clear understanding. The environment itself proved conducive to learning, with classrooms (100%) boasting adequate facilities to support this innovative method. But the success went beyond mere materials and logistics. Every teacher (100%) demonstrated exceptional skill in facilitating discussions and guiding students in applying newly acquired concepts. This seamless alignment of resources, communication, and skilled facilitation paints a promising picture of a flipped classroom model that is well-positioned to empower student learning and engagement (Gu et al., 2022).

Diving into the flipped classroom experience, excitement was palpable among both teachers and students in the fifth and sixth grades. The semester began with a shift: traditional classroom lectures were replaced by engaging videos and online learning materials, accessible to students from the comfort of their homes. This flipped approach aimed to empower independent learning and maximize class time for deeper engagement.

Observations revealed a resounding success. All students (100%) actively engaged with the pre-class materials, demonstrating both access to electronic devices and the internet (100%) and the ability to discuss and apply acquired concepts (100%). Time management skills also flourished, with all students managing their study time effectively (100%). While self-monitoring and task management skills were still developing (87.5%), the potential was evident.

According to the study, 100% of students actively participated in class discussions, as observed during the study. While 75% mastered the art of clear and concise explanations, and 75% consistently completed assignments on time and accurately, the overall learning journey was undeniably positive. The ability to solve problems creatively and appropriately shone through in all students (100%), showcasing the true power of applying pre-learned concepts in an interactive environment.

These observations paint a vivid picture of a flipped classroom model brimming with potential compared to traditional teaching methods (Jdaitawi, 2019). Students actively engaged, honed their self-management skills, and showcased their understanding through discussions and problem-solving. While some areas, like self-monitoring and task management, require further development, the overall success suggests that the flipped

classroom design can be a powerful tool for fostering engagement, application, and independent learning in young minds. As teachers continue to refine their approach and provide targeted support, the future for flipped learning in these classrooms seems bright indeed.

The flipped classroom experiment in the fifth and sixth grades yielded promising results, suggesting a positive impact on student self-regulation. After a semester of flipped learning, interviews with teachers revealed a shift in student behaviour towards increased responsibility and independence. Students reported feeling more prepared for lessons, thanks to the pre-class materials, demonstrating a pattern of proactive learning.

Further analysis pinpointed key factors contributing to this growth. Motivation soared, with 86.9% of students (compared to 64.9% pre-intervention) feeling driven by the flipped materials. This shift can be attributed to clear learning objectives (89.9% reported clarity, up from 68%). Parental support and teacher consistency in providing materials also emerged as crucial elements. Ultimately, students themselves attributed their independence and understanding to the flipped approach.

The research is a convincing illustration of how a flipped classroom might promote self-regulation. By actively interacting with the materials and exhibiting time management responsibilities, students assumed ownership of their education. A deeper level of engagement with the topic matter is suggested by the improved drive and knowledge. However, it's important to acknowledge potential limitations. The self-reported data, while valuable, lacks a control group for comparison. Further research involving control groups and longer intervention periods could solidify the conclusions.

Despite these limitations, the findings offer strong evidence for the potential of flipped classrooms to nurture essential self-regulation skills in young learners. By creating an environment that fosters motivation, clarity, and student agency, educators can empower students to become independent, lifelong learners. As educators continue to refine and explore this innovative approach, the future of flipped classrooms looks bright indeed (Cho, et al., 2019).

The combined evidence suggests that flipped classrooms can positively influence student self-regulation. Students exhibited increased responsibility, independence, and preparedness for class discussions and activities. Contributing factors included motivation, parental support, teacher consistency, and students' own sense of responsibility, time management, and independence.

This research offers useful insights into the potential of flipped classrooms to foster self-regulation in primary school students. The observed benefits in understanding, motivation, and student agency highlight the promise of this approach in empowering young learners to take ownership of their learning journey. Further research exploring the long-term impact and wider application across diverse contexts can solidify the flipped classroom's position as a powerful tool for promoting student self-directedness and academic success.

Discussion

This study provides significant findings regarding the effect of implementing the flipped classroom model on students' self-regulation at the elementary school level. Overall, the findings show that the implementation of the flipped classroom approach has a positive impact on students' ability to self-regulate, with improvements in various aspects of self-regulation such as motivation, engagement in learning, and time management skills.

The results of this study are consistent with the findings of previous studies that indicate the positive benefits of the flipped classroom approach on student self-regulation (Lai & Hwang, 2016; Doman & Webb, 2017; Jdaitawi, 2019; Yoon et al., 2021). This strengthens the conclusion that the implementation of the flipped classroom approach can be an effective strategy in facilitating the development of students' self-regulation skills in the context of basic education.

However, the results also highlighted some areas that require further attention. For example, while most students reported an increase in motivation and understanding of the material taught through the flipped classroom approach, there were still a minority of students who did not experience significant improvements in these areas. Based on this, it can be concluded that there are other factors that should be considered in the process of designing and implementing the flipped classroom model to make it more effective and beneficial for all students.

In addition, there are also some limitations that need to be considered in interpreting the results of this study. One is the lack of a control group for comparison, which may limit the ability to generalize the findings. Therefore, further research involving a control group and a longer intervention period would help to strengthen and validate the findings of this study.

Overall, the results of this study make an important contribution to our understanding of the potential of the flipped classroom approach in improving students' self-regulation in primary schools. Taking into account the results of this study, educators can better understand how to optimize the application of the flipped classroom model in order to provide maximum benefits for the development of students' self-regulation skills. In a broader context, further research that explores the long-term impact and wider applicability of this model may help to strengthen the position of the flipped classroom approach as an effective tool in promoting student self-regulation and academic success.

The implication of this study is that the flipped classroom approach has great potential to improve students' self-regulation at the primary education level. By giving students greater control over their learning process, both in terms of time, place and mode of learning, this approach can help strengthen students' self-regulation. This suggests the need for education to focus more on building students' independence in regulating themselves. The practical implication of these findings is that educators may consider using the flipped classroom approach as an effective strategy in facilitating the development of students' self-regulation in primary education settings. In addition, further research involving more subjects, a variety of contexts, and a longer intervention period may help deepen our understanding of the potential and limitations of this approach in enhancing students' self-regulation more broadly.

In conclusion, the findings suggest that the implementation of the flipped classroom model positively influences students' self-regulation in elementary education, underscoring its potential as an effective pedagogical approach to foster independent learning and academic success.

CONCLUSION

This study delved into the potential of flipped classrooms to foster self-regulation in fifth- and sixth-grade students. Combining qualitative and quantitative methods, the study painted a promising picture. Teachers observed positive shifts in student behaviour, including increased responsibility, independence, and proactive learning habits. Students themselves reported feeling better prepared for lessons, suggesting a positive impact on their sense of ownership and self-efficacy.

Motivation and clarity emerged as the key factors driving this positive development. The flipped materials sparked greater intrinsic motivation, with students feeling more motivated to learn. Clear learning objectives further bolstered this by providing a sense of direction and purpose. Additionally, a supportive environment proved essential. Consistent teacher support, high-quality flipped materials, and effective facilitation of discussions and activities created a space where students could thrive. Notably, the flipped approach emphasis on student agency, through pre-class preparation and in-class application, fostered a sense of ownership over learning, likely contributing to the observed gains in responsibility, independence, and time management skills.

Although these findings are encouraging, limitations exist. The self-reported data lacked a control group, and future research incorporating control groups and longer intervention periods is recommended. Additionally, exploring the application of flipped classrooms across diverse contexts and age groups would provide valuable insights into its broader applicability and potential challenges.

We can better grasp the potential of flipped classrooms to enable young learners to become self-directed, lifelong learners by addressing these areas for future research. This knowledge can inform educational practices and contribute to the development of more effective learning environments that nurture essential self-regulation skills in students of all ages.

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