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The Influence of Collaborative Learning Models in Increasing Elementary School Students' Creativity and Motivation

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ABSTRACT

Background. Collaborative learning is increasingly being implemented in elementary schools as an alternative to increase student creativity and motivation. However, the challenges and obstacles in its implementation need to be considered to understand its impact on learning effectiveness. Teachers should have many methods to make students happier and receive lessons well

Purpose. This research aims to investigate the effect of the collaborative learning model on increasing student creativity and motivation at the elementary school level in West Sumatra. The main focus is to understand teachers' perceptions of this model, identify the obstacles faced, and evaluate its effectiveness.

Method. The research method used was a quantitative survey with 20 teachers from several elementary schools in West Sumatra district as respondents. Data collection was carried out through distributing questionnaires designed to measure teachers' perceptions of the collaborative learning model, as well as its impact on student creativity and motivation. Data analysis used the Miles and Huberman approach.

Results. Analysis of the questionnaire results showed that the majority of teachers (75%) strongly agreed that the collaborative learning model had great potential to increase student creativity and motivation. However, the main challenge identified was the limited time in the established curriculum.

Conclusion. Although the collaborative learning model is considered effective, teacher support and understanding needs to be improved through additional training. Strategic adjustments are also needed to overcome the constraints of time constraints and individual evaluations, as well as to understand more deeply differences in student skill levels. Overall, this learning model has great potential in increasing student motivation and creativity in elementary school, provided it is expanded and better supported by educators.

KEYWORDS

Collaborative Learning, Creativity and Motivation, Increasing Elementary School Students'

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INTRODUCTION

21st century education witnesses dynamic changes in human life triggered by technological advances, globalization, and the complexity of social change (Fisk et al., 2019). The development of information and communications technology has drastically changed the educational landscape, having a significant impact on the way we learn, communicate and adapt to an ever-changing environment (Piccolo et al., 2021). Globalization opens the door to access to various cultures, thoughts and knowledge, requiring education to become more inclusive and

accommodate diversity (Gaisch et al., 2019).

In this context, traditional didactic learning models and teachers as the center of learning are faced with significant challenges. The limitations of this approach in responding to the dynamics of the times make it no longer sufficient for developing essential skills in 21st century life (Krewski et al., 2020). Students need to be involved in a learning process that is more dynamic, contextual, and relevant to real life (Dakabesi & Luoise, 2019).

21st century education highlights the need to transform learning approaches (Alam, 2022). As part of efforts to align the education system with the demands of the times, collaborative learning is a promising solution. This model shifts the focus from a teacher-centric approach to a more student-centric approach, where students are not only recipients of information, but also shapers of their own knowledge through collaboration.

One solution that is gaining widespread attention is collaborative learning, where students work together in groups to achieve shared learning goals (Mora et al., 2020). This approach creates a more inclusive learning environment, promotes interaction between students, and encourages the sharing of ideas, knowledge, and experiences (Muñoz Martínez & Porter, 2020). In this model, the teacher acts as a facilitator who guides, supports, and stimulates discussion and reflection among students.

This collaboration is not only limited to cooperation between students, but is also a means of developing 21st century skills (González-Salamanca et al., 2020). Creativity, effective communication, problem solving and collaboration are the keys to this learning model (Sun et al., 2020). Students not only learn from teachers or textbooks, but also learn from each other, exploring deep understanding through interaction and shared experiences.

In the context of elementary schools (SD), the initial phase of formal education is the foundation for student development (Asongu & Odhiambo, 2019). The importance of ensuring that in addition to acquiring knowledge, students also develop the skills necessary to face future challenges has become very apparent. Elementary school is a critical phase where the basics of knowledge, values, and attitudes are formed. Therefore, attention to learning models that are able to increase students' creativity and motivation in elementary school is not just relevant, but is an urgent need.

Through a more collaborative learning approach, it is hoped that students can be more actively involved in the learning process. They are not only spectators, but also role takers in the teaching and learning process. It is hoped that the application of this learning model at the elementary level will be able to form a solid foundation for students' intellectual, social and emotional development.

This research was conducted in response to the urgent need to understand and improve the effectiveness of learning models in the elementary school context. The problem underlying this research lies in the tendency of students' lack of creativity and motivation at the elementary level, which can affect their overall development. Traditional learning models that are still widely applied tend to pay less attention to collaborative and creative aspects in learning.

In an effort to overcome this problem, this research proposes the application of the collaborative learning model (Khan et al., 2021). Therefore, the way taken to overcome this problem is to investigate the impact of this learning model on increasing student creativity and motivation. Through a collaborative approach, it is hoped that students can be more actively involved in the learning process, stimulate their creativity, and increase learning motivation.

This research is expected to make a significant contribution to curriculum development and learning practices at the elementary school level. By understanding the influence of the

collaborative learning model, policy makers and educational practitioners can make more informed decisions in designing relevant and effective learning methods. The implications of this research may also extend to the national level, influencing educational policy and teaching practices in elementary schools.

Previous research has focused on the influence of the Problem-Based Learning (PBL) learning model on students' critical thinking skills. One of the studies was conducted at public elementary school 105390 in the even semester of the 2019/2020 school year, involving class V students. The results showed that students taught using the PBL model had better critical thinking skills than those taught using the direct learning model. Additionally, the study found that students with high motivation had better critical thinking skills than students with low motivation. Finally, there is an interaction between the learning model and the level of motivation in influencing students' critical thinking skills. This research contributes to the understanding of the complex relationship between learning models, motivation, and students' critical thinking skills at the elementary school level (Khairani et al., 2020).

The research focuses on examining the impact of a digital flipped classroom teaching method integrated with a cooperative learning model on learning motivation and outcomes among 242 college students in Henan Province. The study employs a nonequivalent pretest posttest control group design, with four groups utilizing different teaching methods. The results indicate significant positive effects of the flipped classroom teaching method and cooperative learning on both learning motivation and outcomes. This research offers practical insights for educators by suggesting effective strategies for implementing flipped classroom teaching practices, aiming to enhance students' engagement and learning experiences in higher education. The study's originality lies in its systematic exploration of the integrated design of flipped classroom practices and its potential to contribute to the enrichment of flipped classroom theory and instructional strategies (Jian, 2019).

The aim of this research is to critically investigate the influence of the collaborative earning model on increasing student creativity and motivation at the elementary school level. By setting clear objectives, this research aims to provide a deeper understanding of how this learning model can be integrated effectively in the context of elementary education.

By conducting this research, it is hoped that findings and recommendations will emerge that can improve learning design in elementary schools. The hope is that the collaborative learning model can be used as an alternative that has the potential to increase student creativity and motivation. The implication is that it is hoped that there will be an increase in learning outcomes and students' readiness to face the demands of future developments. This research is also expected to provide conceptual and practical contributions to educational literature and curriculum development.

RESEARCH METHODOLOGY

This research aims to investigate the influence of the collaborative learning model on increasing student creativity and motivation in elementary schools using a quantitative approach via survey methods. The research object involved elementary school teachers in several elementary schools in districts located in West Sumatra. This research focuses on teachers' perceptions of the influence of the collaborative learning model on student creativity and motivation in the elementary school educational environment.

This research methodology will use a survey design by distributing questionnaires to 20 teachers as respondents, who were randomly selected from several elementary schools in West Sumatra district. A questionnaire will be designed to collect data regarding teacher perceptions of

the influence of the collaborative learning model, as well as increasing student creativity and motivation. The collected data will be analyzed using the Miles and Huberman data analysis approach, which involves steps such as data reduction, data presentation, and drawing conclusions (Khoa et al., 2023).

The use of random sampling is expected to represent variations among elementary school teachers in the West Sumatra area, provide more representative results. In addition, the survey method will allow collecting data from a number of respondents that includes a broad view of teachers regarding the effectiveness of the collaborative learning model. It is hoped that this research can contribute to a deeper understanding of the positive impact of the collaborative learning model on student creativity and motivation at the elementary school level, which can guide the development of more effective educational strategies in the future.

RESULT AND DISCUSSION

Student Creativity

Student creativity is an important foundation in the educational process which aims to form individuals who are able to think critically, generate new ideas and find innovative solutions (Tang et al., 2020). It's not just about artistic skills, but also includes the ability to connect disparate ideas, overcome obstacles, and see problems from multiple perspectives. Creativity sparks the imagination, opens the door to new discoveries, and creates space for innovation inside and outside the classroom (Hughes & Morrison, 2020). Through creative learning, students are empowered to develop essential skills to respond to the complex demands of the modern world (Franklin & Harrington, 2019).

The creative process is not only about finding answers, but also about finding relevant questions (Peters & Romero, 2019). Creative education provides opportunities for students to ask, explore and create. It involves active engagement, exploration of ideas, and collaboration. In this atmosphere, mistakes are considered part of the learning process, and students are empowered to see failure as an opportunity to grow (Zhao & Watterston, 2021). This approach creates a dynamic and stimulating learning space, where creativity is not an end goal, but a continuous process towards deep understanding.

Student creativity not only influences intellectual aspects, but also has an impact on emotional and social development (Smyrnaiou et al., 2020). The ability to convey ideas in a unique and original way increases students' self-confidence and self-esteem. Additionally, collaboration on creative projects strengthens social skills and positive reciprocity between students. Therefore, creating a learning environment that supports and stimulates creativity is an important challenge for education.

The goal of creative education is to form individuals who have the ability to think critically, generate new ideas, and find innovative solutions (Tang et al., 2020). One concrete implementation of this goal is to involve students in creative projects that challenge them to apply their creative thinking. For example, the goal of developing student creativity can be implemented by giving students assignments to design innovative solutions to problems faced in their environment or creating art projects that combine various creative elements.

In the context of the goal of connecting different ideas and looking at problems from various perspectives, implementation can involve curriculum design that includes cross-disciplinary subjects and the use of teaching methods that promote a multidimensional approach to problem understanding (Lake et al., 2021). For example, teaching through collaborative projects that require the integration of knowledge from various subjects can be an effective implementation of this goal.

The importance of involving students in the creative process and providing opportunities to ask, explore, and create can be implemented by creating a learning environment that encourages initiative and exploration (Ansari & Khan, 2020). Teachers can integrate discussion sessions and learning projects that stimulate questions and experimentation. This can create a dynamic classroom atmosphere where mistakes are considered a natural part of the learning process, in keeping with the goal of seeing failure as an opportunity for growth.

On a more concrete level, implementing goals to strengthen students' social and collaborative skills can involve building creative project team (Androutsos & Brinia, 2019). Students can work together to produce original works, strengthen their social skills and build positive reciprocity between students, in accordance with the set goals. Thus, each step of this implementation serves as a direct contribution to the achievement of the goals creative education and creating an environment that supports the development of student creativity (Halabi, 2020).

The aim of this research is to critically investigate the influence of the Collaborative Learning Model on increasing student creativity and motivation at the elementary school level. By setting clear objectives, this research aims to provide a deeper understanding of how this learning model can be integrated effectively in the context of elementary education (Grant, 2020).

By conducting this research, it is hoped that findings and recommendations will emerge that can improve learning design in elementary schools. The hope is that the collaborative learning model can be used as an alternative that has the potential to increase student creativity and motivation. The implication is that it is hoped that there will be an increase in learning outcomes and students' readiness to face the demands of future developments. This research is also expected to provide conceptual and practical contributions to educational literature and curriculum development.

The first question related to teachers' views on student creativity and motivation with the question, How often do you involve the collaborative learning model in your teaching? With answer options: Always, often, sometimes, rarely and never. With the following answer results:

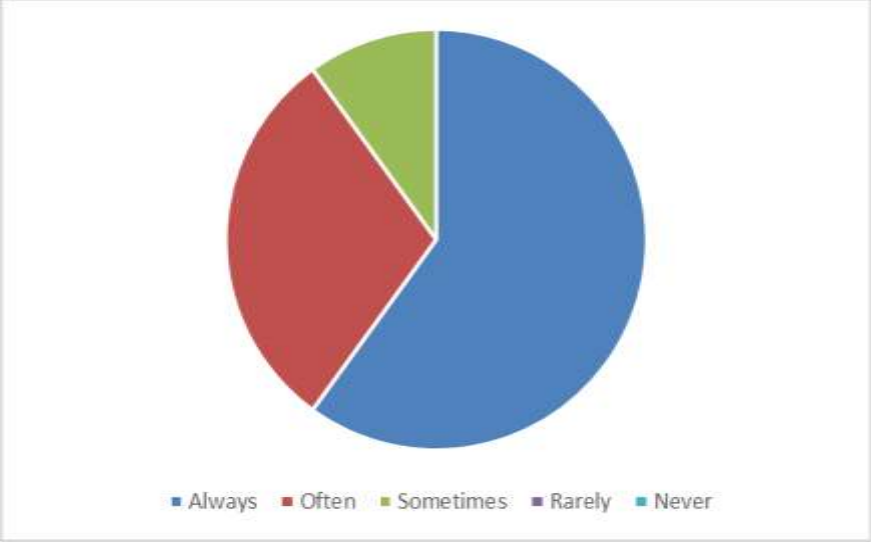

Figure 1. Results of respondents' answers in involving the collaborative learning model in teaching

The results of the questionnaire show the teacher's views on student creativity and motivation regarding the use of the collaborative learning model. Questions related to the frequency of use of collaborative learning models provide an interesting picture of the extent to which collaborative approaches are integrated into everyday teaching. Of the 20 respondents, 12 teachers (60%) said they always involved the collaborative learning model, while 6 teachers (30%) said they did it

often, and 2 teachers (10%) said they sometimes applied it. There were no teachers who stated that they rarely or never used the collaborative learning model.

Analysis of these results provides a positive picture regarding the implementation of the collaborative learning model. The fact that most teachers always or often apply this approach reflects awareness and commitment to the importance of student creativity and motivation in learning. Teachers who consistently employ a collaborative approach may be more likely to create an environment that supports creativity, as the model intrinsically encourages students to collaborate, share ideas, and work together.

However, it is also worth noting that a small proportion of teachers (10%) only occasionally using a collaborative learning model. This can be caused by certain obstacles or challenges, such as time constraints, lack of training, or student resistance to this method. Therefore, it is necessary to carry out further reflection to understand what might be the inhibiting factors and how to overcome these obstacles so that the collaborative approach can be applied consistently.

Although the results of the questionnaire provide positive insights regarding the frequency of use of the collaborative learning model, the steps continuation could involve efforts to increase understanding and implementation of this model across schools. Additional training, sharing best practices among teachers, and building an inclusive, collaborative culture can be steps to increase consistent use of this learning model. Thus, the results of this questionnaire not only provide information about the frequency of use of collaborative learning models but also provide a basis for improvement and further development in order to increase student creativity and motivation.

The next question, According to your experience, to what extent can the collaborative learning model increase student creativity? With the following answer options: Very high, high, medium, low and very low, with the following answer results:

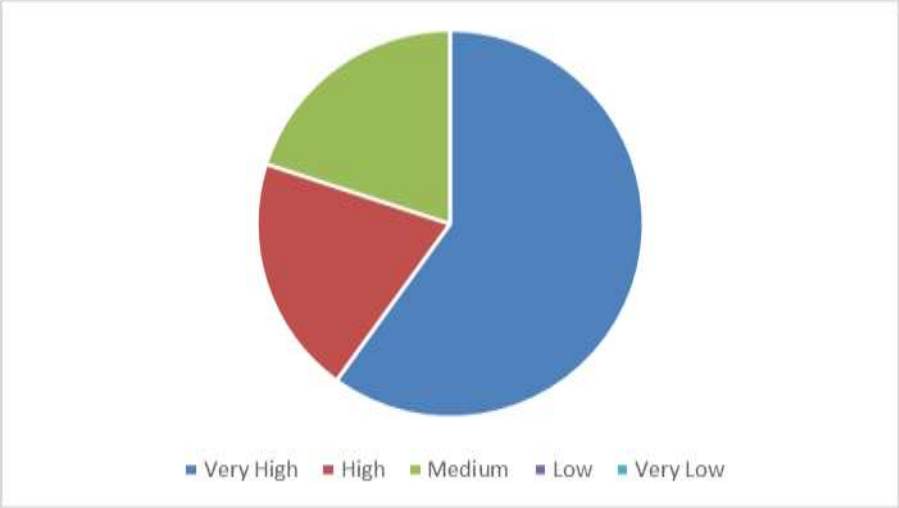

Figure 2. The results of respondents' answers to the collaborative learning model can increase student creativity

The results of the questionnaire regarding the teacher's views on the extent to which the collaborative learning model can increase student creativity provide a positive picture of the effectiveness of the model . As many as 12 out of 20 teachers (60%) stated that the collaborative learning model had a very high impact on increasing student creativity, while 4 teachers (20%) stated that it had a high impact, and 4 teachers (20%) stated that it had a medium impact. No one gave a low or very low assessment regarding the influence of the collaborative learning model on student creativity.

From these results, it can be concluded that the majority of teachers believe that the collaborative learning model is effective in stimulating and increasing student creativity. These positive views may reflect these teachers' positive experiences in implementing collaborative approaches in their teaching. This learning model naturally facilitates the exchange of ideas, discussion, and collaboration between students, creating a stimulating environment for the development of creativity.

However, it is important to acknowledge that some teachers (20%) rated the impact as moderate. This can be caused by variations in the interpretation or understanding of creativity, as well as the presence of external factors such as class characteristics or certain types of learning materials that may be more challenging to integrate with collaborative learning models.

Next steps may involve further exploration to understand factors that might influence the 'medium' rating. An open dialogue with teachers who give moderate ratings can open insight into the elements that need to be improved or perfected in implementing the collaborative learning model in order to increase its impact on student creativity. Overall, the results of the questionnaire highlight the majority of teachers' belief in the potential of the collaborative learning model. Learning as an effective tool to enrich and increase student creativity. This analysis provides a foundation for better understanding teachers' experiences and developing strategies to better utilize the full potential of collaborative learning models in supporting student creativity.

Next question. In your experience, to what extent can the Collaborative Learning Model increase student motivation? With answer options: Very high, high, medium, low and very low. With the following answer results:

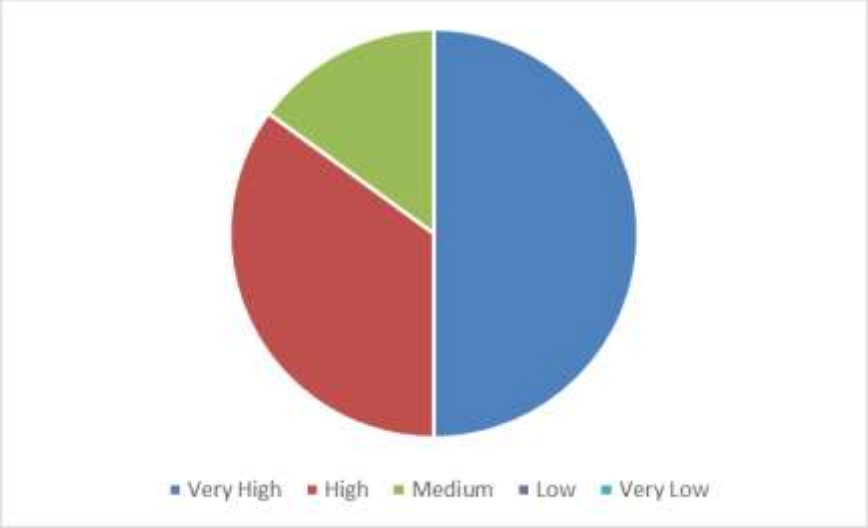

Figure 3. The results of respondents' answers to the collaborative learning model can increase student motivation

The results of the questionnaire regarding the extent to which the collaborative learning model can increase student motivation provide a positive picture, although they show variations in teacher perceptions. Of the 20 teachers who participated, 10 teachers (50%) gave a very high assessment, 7 teachers (35%) gave a high assessment, and 3 teachers (15%) gave a moderate assessment regarding the impact of the collaborative learning model on student motivation. No teacher gave a low or very low rating.

In looking at these results, it seems that the collaborative learning model is considered a strong tool in increasing student motivation according to the majority of participating teachers. Teachers who give very high ratings may have seen significantly positive changes in students'

levels of participation and engagement in collaborative learning. This model, which encourages students to work together, share ideas, and support each other, may have a positive impact on students' enthusiasm for learning.

It is important to note that a small number of teachers (15%) gave moderate ratings. Some factors that may contribute to this assessment may involve specific challenges or barriers in implementing the collaborative learning model. These factors may include different class dynamics, students' level of readiness for collaboration, or lack of adequate support and training in implementing this learning model.

Further analysis can be carried out by communicating directly with teachers who give moderate ratings, to understand the perspective and their experiences in more depth. This dialogue can provide valuable insight to identify areas that may need improvement or adjustments to increase the effectiveness of the collaborative learning model in increasing student motivation.

Overall, the results of the questionnaire reflect the majority of teachers' belief in the effectiveness of the collaborative learning model in stimulating student motivation . Although there are variations in assessments, this provides a positive outlook and provides a basis for continued efforts to optimize the application of collaborative learning models in the context of student motivation.

Student Motivation

Student motivation is the internal or external driver that drives their behavior and efforts in the learning context (Wardani et al., 2020). This includes the desire to achieve goals, interest in the subject or task, and the drive for academic achievement. Student motivation has a central role in determining their level of participation and dedication to the learning process (Aldowah et al., 2020). Motivation can be intrinsic, stemming from internal desires and personal satisfaction, or extrinsic, arising from external factors such as rewards or punishments (Ryan & Deci, 2020).

Intrinsic motivation is considered a more sustainable form of motivation, as it is driven by students' desire to learn for themselves, not to gain external recognition (Chaudhuri, 2020). A learning environment that stimulates student motivation involves giving meaning to learning material, providing space for exploration of interests and talents, and providing responsibility in the learning process.

In addition, positive relationships between teachers and students can play a key role in increasing student motivation. Providing constructive feedback, recognizing achievements, and creating challenges appropriate to students' skill levels can motivate them to reach their maximum potential (López-Faican & Jaen, 2020). Awareness of the uniqueness of each student and their different motivational needs is the basis for creating an environment that supports sustainable motivation in the educational process.

The main goal in increasing students' intrinsic motivation in learning mathematics is to create an environment where students feel internally motivated to learn and understand mathematical concepts. Focus not only on meeting academic demands, but also on personal satisfaction in mastering the material (Alamri, 2019). Functions that support this goal involve developing interesting and relevant teaching methods that can help students relate the material to their daily lives. Additionally, supporting the diversity of ways students demonstrate understanding and achievement in mathematics is an integral part of these functions.

Implementation of this goal involves the use of project-based or case study learning approaches that challenge students to apply mathematical concepts in real-world contexts (Sutaphan & Yuenyong, 2019). Providing recognition for individual and group achievements, giving value to

student efforts and progress, and providing constructive feedback are effective implementation strategies for increasing intrinsic motivation. The importance of creating a supportive and motivating classroom atmosphere, where mistakes are considered part of the learning process, is also the focus of implementation to strengthen student motivation.

As part of implementation, teachers have a central role in providing positive feedback, providing grades that provide positive encouragement , and create space for exploration of students' interests and talents. Building positive relationships between teachers and students is also a key strategy in stimulating intrinsic motivation (Chaudhuri, 2020). By designing learning that explores students' interests and talents and creates an inclusive classroom environment, this implementation aims to achieve the main goal, namely increasing students' intrinsic motivation in learning mathematics.

The first question is related to obstacles and challenges. Do you face obstacles or challenges in implementing the collaborative learning model? With yes and no answer options. With the results of the analysis answers as follows:

Figure 4. Respondents' answers in dealing with obstacles or challenges in implementing the collaborative learning model

All respondents stated that they faced obstacles in implementing the collaborative learning model. Although not specific regarding the type of obstacle, these results indicate the challenges teachers face in integrating collaborative approaches in learning. Challenges can stem from a variety of factors, such as limited resources, lack of training, or difficulty motivating students. This recognition becomes a starting point for further understanding and overcoming problems that may arise. The next step could involve more in-depth interviews with teachers to identify specific obstacles and design solutions that support the implementation of the collaborative model. Although there are obstacles, this recognition does not reduce the positive potential of the collaborative learning model, and can help design more effective supporting strategies.

The next question is, what kind of obstacles do you experience in implementing the collaborative learning learning model? with the following answer options: Minimal support and training, time constraints, student resistance, lack of facilities, difficulty evaluating individuals and differences in student skill levels. With the following answer options:

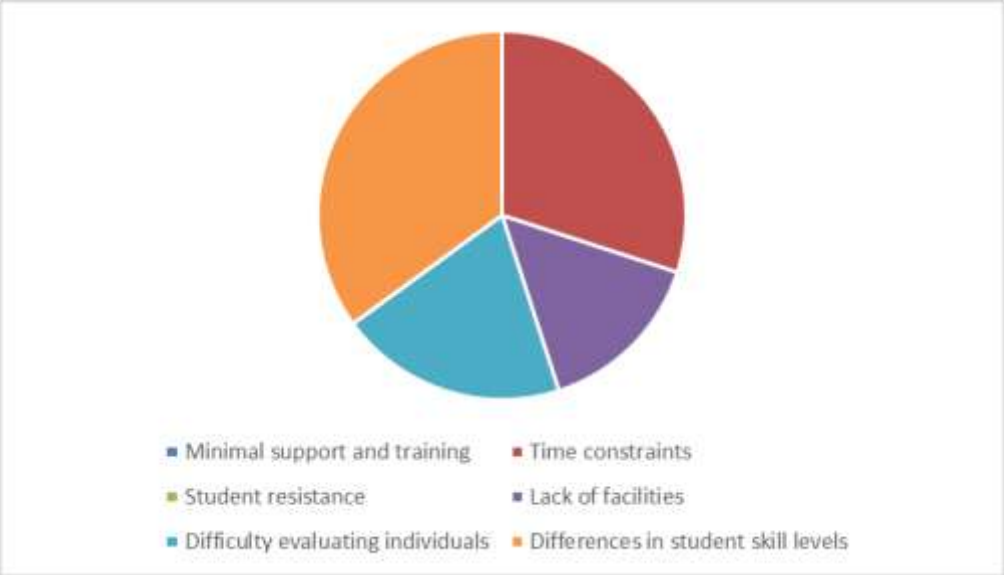

Figure 5. Barriers experienced by respondents in implementing the collaborative learning model

The results of the analysis show a number of obstacles faced by teachers in implementing the collaborative learning model. Time constraints were the main challenge expressed by 6 out of 20 respondents. This obstacle reflects obstacles in organizing and implementing collaborative activities without sacrificing the designated learning time. With limited time, teachers may find it difficult to pay sufficient attention to each element of a collaborative approach, such as structuring groups or holding in-depth discussions.

In addition, lack of facilities was also identified as an obstacle by 3 respondents. Lack of facilities may include limited access to technology, classrooms that do not support group work, or other limited physical resources. This obstacle can hinder the effective implementation of the collaborative learning model, because adequate facilities are needed to create an environment that supports student collaboration and interaction.

The existence of difficulties in evaluating individuals is also a concern for 4 respondents. This suggests that evaluating individual performance in a collaborative learning context may be a challenge. This model emphasizes teamwork, and individual assessment can be complicated, especially if there is a need to measure each student's contribution fairly and accurately.

Differences in student skill levels were the most frequently expressed obstacle, with 7 respondents reporting experiencing it. This reflects the difficulty in managing differences in student abilities in work groups. Teachers may face challenges to align students' skill and understanding levels in collaborative learning situations, which can impact teaching effectiveness.

Overall, the results of the analysis indicate that these constraints have significant implications for the implementation of the collaborative learning model. Special solutions and strategies are needed that can help teachers overcome each of these obstacles, such as additional training, adjusting learning time, or developing evaluation methods that are appropriate to collaborative contexts. Through an in-depth understanding of these obstacles, schools and educational institutions can design more effective support to increase the success of implementing the collaborative learning model.

The next question is, To what extent do you agree that the collaborative learning model can be an effective approach to increasing student creativity and motivation in elementary schools? With the following answer options: Strongly agree, agree, neutral, disagree and strongly disagree. With the following answer results:

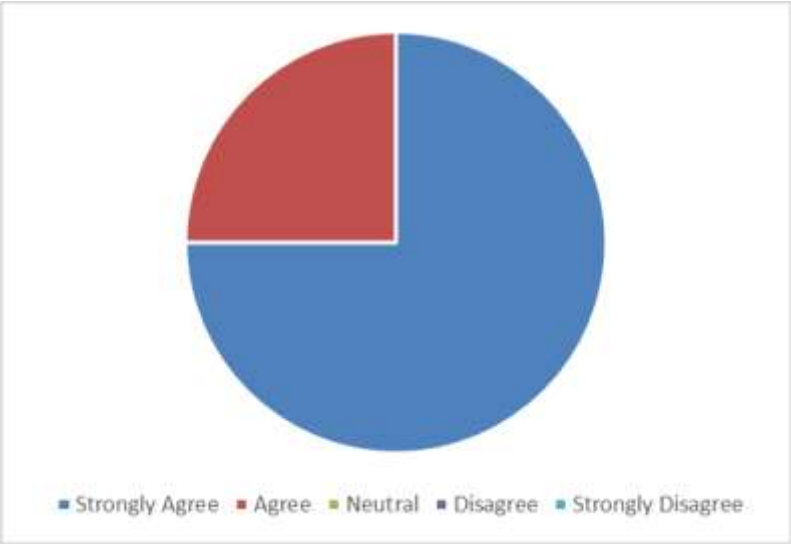

Figure 6. Respondents' answers that the collaborative learning model can be an effective approach to increase students' creativity and motivation in primary schools

The results of the analysis of the question to what extent teachers agree that the collaborative learning model can be an effective approach to increasing student creativity and motivation in elementary schools shows strong support. A total of 15 respondents (75%) stated that they strongly agreed, while 5 respondents (25%) stated that they agreed.

When the majority of respondents stated that they strongly agreed, this reflects a strong belief that the collaborative learning model has significant potential to stimulate student creativity and motivation in elementary school level. This high level of support could be due to teachers' positive experiences in implementing the collaborative approach or seeing its positive impact on their students.

While there was a small group who agreed, it should be noted that this level of support was still positive. Some teachers may view the collaborative learning model as an effective approach, but with a more moderate level of confidence compared to the group who strongly agree. Factors such as personal experience, class characteristics, or assessments of students' level of readiness for collaborative learning may influence this level of agreement. Overall, the results of the analysis indicate that the majority of teachers support the collaborative learning model approach as an effective means of increasing student creativity and motivation in elementary school. This support provides a strong basis for encouraging implementation of this model in educational contexts, while understanding that individual differences and experiences may influence levels of agreement. Efforts can be made to continue to strengthen teachers' understanding and support of the benefits of the collaborative learning model through additional training, sharing best practices, and building a collaborative culture among educators.

CONCLUSION

From the analysis of the results of the six questionnaire questions related to the collaborative learning model in elementary schools, several conclusions can be drawn that provide a balanced picture. The majority of teachers (75%) strongly agree that the collaborative learning model has great potential in increasing student creativity and motivation. This strong support reflects a belief in the added value of a collaborative approach in building a learning environment that stimulates and supports student development at the primary school level. However, the results of the

questionnaire also revealed several challenges faced by teachers in implementing the collaborative learning model.

The main obstacle identified was time constraints, reflecting the pressure on teachers to cover this model within the prescribed curriculum. Additionally, the difficulty in evaluating individual and varying student skill levels highlights the complexity of managing and measuring individual student progress in a collaborative learning context. In conclusion, while the collaborative learning model is considered an effective approach, teacher understanding and support still needs to be strengthened through additional training and exchange of experiences. Strategic adjustments are also needed to overcome the challenges of time constraints and individual evaluations, as well as to understand differences in student skill levels in more depth. Through the joint efforts of teachers, schools can continue to develop more effective collaborative approaches, taking into account challenges and maximizing the positive potential of the collaborative learning model in increasing student motivation in elementary schools.

AUTHORS' CONTRIBUTION

Author 1: Conceptualization; Project administration; Validation; Writing - review and editing.

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