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Teacher's Ability to Implement Mathematical Learning Variation Skills at MI PSM Gempolan II

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Abstract: Education has an important role in human life. The learning process of an education is organized actively, whereas if you do the same activity continuously it can cause boredom and lower the spirit of learning. In order to overcome boredom in students, teachers should make variations in learning, so that in learning and teaching situations, students always show perseverance, enthusiasm, and full participation. Learning activities have not gone well, this is due to the obstacles that occur during the learning process, especially in making variations. From the description above, the research problem can be formulated as follows (1) How is the implementation of how to teach teachers to use Variations in mathematics learning at MI PSM Gempolan II? (2) How do students respond to the variety of mathematics learning skills at MI PSM Gempolan II? The research method used is a qualitative descriptive research type. The subjects of the research are school principals, class teachers and class V students. The data collection techniques used are observation, interview, and documentation. The data sought in this research is the teacher's ability in classifying learning variations and student response. Data analysis techniques in this research include data collection, data reduction, data presentation, and drawing conclusions. The results of the research show the following findings (1) The teacher's ability to teach students by using learning variations is good, which can be seen based on indicators such as voice variations, teaching style, teacher and student interaction has begun to occur well, which can be seen from the student's learning motivation and evaluation results (2) Student response when implementing student learning variations is enthusiastic and enthusiastic. Students are not only recipients but givers of opinions can see students learn based on their own interests and abilities, the interaction between teachers and students has begun to be intertwined so that learning at school becomes more alive.

Keywords: Teacher ability, variation of mathematics learning, learning outcomes.

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INTRODUCTION

In the context of Indonesian education, particularly in Madrasah Ibtidaiyah (MI), the role of teachers is pivotal in shaping the quality of mathematics education. The ability of teachers to implement varied teaching strategies significantly influences student engagement and learning outcomes. This research focuses on the skills of teachers in

executing varied mathematics teaching methods at Madrasah Ibtidaiyah PSM Gempolan II Gurah, Kediri. Mathematics, as a subject, often presents challenges to students due to its abstract concepts and logical reasoning requirements. Traditional teaching methods may not always cater to the diverse learning needs of students. Therefore, it is essential for teachers to employ a variety of teaching techniques to address these challenges effectively. The implementation of varied teaching strategies in mathematics aims to accommodate different learning styles and paces among students. By diversifying instructional approaches, teachers can enhance student understanding and foster a more inclusive learning environment. At Madrasah Ibtidaiyah PSM Gempolan II Gurah, Kediri, the application of such varied teaching methods is crucial. The school's commitment to improving the quality of education necessitates an in-depth examination of teachers' competencies in this area.

Research indicates that teachers' professional competencies, including their ability to implement diverse teaching strategies, are closely linked to student achievement in mathematics. Effective teaching practices can lead to improved student performance and a more positive attitude towards the subject. Furthermore, the development of teachers' pedagogical skills is an ongoing process that requires continuous professional development and support. Training programs and workshops play a significant role in enhancing teachers' abilities to apply varied teaching methods effectively. The Merdeka Curriculum, introduced in Indonesia, emphasizes the importance of student-centered learning and the need for teachers to be adaptable in their teaching approaches. This curriculum encourages the use of diverse teaching strategies to meet the varied needs of students. In this context, it becomes imperative to assess the current state of teachers' skills in implementing varied mathematics teaching methods at Madrasah Ibtidaiyah PSM Gempolan II Gurah. Understanding their competencies will provide insights into areas that require improvement and inform future professional development initiatives.

This research aims to evaluate the proficiency of mathematics teachers in applying varied teaching strategies, identify challenges they face, and propose recommendations for enhancing their teaching practices. By doing so, it seeks to contribute to the overall improvement of mathematics education at the institution. The findings of this study are expected to provide valuable information for educational stakeholders, including school administrators, policymakers, and teacher educators, to support the continuous development of effective teaching practices in Madrasah Ibtidaiyah. In conclusion, the ability of teachers to implement varied teaching strategies is crucial for enhancing the quality of mathematics education. By focusing on developing these competencies, educational institutions can better meet the diverse learning needs of students and improve overall academic performance.

METHODS

This research employs a qualitative descriptive approach to deeply explore the competencies of teachers in implementing various teaching strategies in mathematics at Madrasah Ibtidaiyah PSM Gempolan II Gurah - Kediri. The qualitative method is chosen because it allows the researcher to investigate phenomena in natural settings, offering a comprehensive understanding of how teachers apply varied instructional techniques in their everyday classroom practices. Qualitative research emphasizes meaning, experience, and understanding rather than statistical analysis. In this study, the aim is to capture the real-life experiences of mathematics teachers, understand their perceptions, identify the strategies they use, and analyze the challenges they face. The focus lies in revealing the depth and complexity of teaching variation rather than measuring it numerically. The setting of the research is Madrasah Ibtidaiyah PSM Gempolan II Gurah, located in Kediri, East Java. This particular institution was selected due to its consistent efforts to improve mathematics instruction and its commitment to implementing innovative pedagogical

practices. The school serves as a suitable environment for studying the dynamics of teaching variation in the classroom.

Participants in this research are mathematics teachers at the selected school. These participants are chosen using purposive sampling, where the selection is based on specific criteria relevant to the research objectives. Teachers involved must have at least two years of teaching experience and be actively involved in the process of planning and delivering mathematics lessons. The main data collection techniques used in this research include observation, interviews, and documentation. These methods are utilized to ensure the data collected is rich, in-depth, and reflective of actual teaching practices. Each method complements the others and adds layers of insight into the research focus. Classroom observations are conducted to witness firsthand how teachers employ variation strategies during mathematics instruction. These observations help the researcher to capture authentic teacher-student interactions, instructional materials used, teaching methods applied, and classroom dynamics. Observations are non-participatory in nature to allow for natural behavior from both teachers and students.

During the observations, field notes are taken meticulously to document every teaching activity and classroom interaction. These notes provide qualitative data that are later analyzed to identify patterns, techniques, and levels of variation applied by each teacher. The goal is to analyze whether these strategies align with best practices in mathematics education. Semi-structured interviews are conducted with participating teachers to gain further insight into their teaching strategies, challenges, and personal reflections. These interviews provide an opportunity for teachers to explain the rationale behind their instructional decisions and to reflect on the outcomes of their teaching approaches. The interviews are guided by a list of open-ended questions to ensure consistency across participants while still allowing room for spontaneous responses. Interviews are audio-recorded with consent and then transcribed for analysis. This process ensures that the data remains true to the teachers' actual words and intentions. Documentation is another essential data collection method used in this research. Lesson plans, teaching materials, student worksheets, and school curriculum guides are collected and analyzed. These documents provide additional context to the teaching strategies observed and discussed in interviews. Analyzing lesson plans allows the researcher to assess whether planning aligns with the actual classroom implementation. It also reveals whether teachers deliberately integrate variation into their instructional design or if variation is applied spontaneously during teaching.

The documentation of student activities and learning outcomes also provides insight into the effectiveness of varied teaching strategies. For instance, student engagement levels and achievement in mathematics may reflect the impact of teaching variation. The data analysis process in this research is conducted using thematic analysis. Thematic analysis involves identifying, analyzing, and reporting patterns or themes within the data. This process begins with data familiarization, where all collected data are read repeatedly to develop a deep understanding. Next, initial codes are generated from the data. These codes are meaningful labels that represent key features of the information collected from observations, interviews, and documents. Coding is conducted manually and organized systematically for further analysis. Following coding, themes are identified by grouping similar codes that represent broader concepts related to teaching variation. These themes are refined to ensure they accurately reflect the data and support the research questions. The themes help structure the findings of the study.

Once themes are finalized, the researcher begins interpreting the data, linking findings to existing theories and frameworks in mathematics education. This interpretation seeks to explain how and why teachers apply varied strategies and what factors influence their decision-making processes. Credibility and trustworthiness are critical in qualitative research. To ensure the validity of findings, the researcher uses triangulation by comparing data from multiple sources observations, interviews, and documents. This approach helps verify the consistency and accuracy of the data. Member

checking is also used to confirm the accuracy of interview transcripts and interpretations. Participants are given the opportunity to review their interview data and the researcher's interpretations to ensure that their viewpoints are represented fairly and accurately.

Peer debriefing is another strategy employed to enhance trustworthiness. The researcher discusses the research process and emerging findings with colleagues or mentors familiar with qualitative research. This step helps reduce bias and improve the rigor of the study. Ethical considerations are carefully observed throughout the research. Informed consent is obtained from all participants before data collection. Participants are assured of confidentiality and anonymity, and all data are used solely for academic purposes. The study follows ethical guidelines by maintaining respect, transparency, and responsibility in all research interactions. Teachers are informed of their right to withdraw from the study at any time without any negative consequences. This study is limited to one institution and focuses solely on mathematics teachers, which may affect the generalizability of the findings. However, the goal is not to generalize but to gain a deep understanding of a specific context that may inform broader educational practices.

The duration of the research is planned over a period of three months, allowing sufficient time for data collection, analysis, and reporting. This timeline includes preparatory stages, fieldwork, data transcription, coding, theme development, and writing. Data collection is conducted in multiple stages to allow for reflection and refinement. After initial observations and interviews, preliminary findings are analyzed, and follow-up questions or observations are conducted as necessary. Throughout the study, the researcher maintains a reflective journal to document insights, decisions, and challenges encountered during the research process. This journal serves as a tool for self-awareness and methodological transparency. The research seeks to contribute to both practical and theoretical knowledge in mathematics education. Practically, it provides recommendations for teacher training and curriculum development. Theoretically, it adds to the understanding of instructional variation in primary-level mathematics. The findings are expected to reveal various teaching styles, strategies, and adaptation techniques that teachers use to address the diverse learning needs in their classrooms. These insights will help identify professional development needs and support future instructional planning.

Moreover, the study aims to highlight the contextual factors such as school culture, administrative support, and resource availability that affect teachers' ability to implement varied strategies. These factors are essential to consider when designing interventions for teacher improvement. By grounding the research in actual classroom practices, the study ensures relevance and applicability. It moves beyond theoretical discussion and provides concrete examples of what works and what can be improved in the real-life setting of a Madrasah Ibtidaiyah. Finally, this research methodology provides a comprehensive and rigorous framework to explore the nuanced and complex phenomenon of teaching variation in mathematics. Through careful planning, systematic data collection, and thorough analysis, the study aims to offer meaningful contributions to the field of education in Indonesia.

RESULTS

This section presents the findings of the study on the ability of mathematics teachers at Madrasah Ibtidaiyah PSM Gempolan II Gurah, Kediri, in implementing varied teaching strategies. The research aimed to explore how teachers adapt their instructional methods to accommodate diverse student needs and learning styles. The study revealed that the teachers at the institution demonstrated a commendable understanding of the importance of varied teaching strategies in mathematics education. They acknowledged that students have diverse learning styles and that a one-size-fits-all approach may not be effective in facilitating understanding. However, the implementation of these varied strategies was not without challenges. Teachers reported facing constraints such as limited resources,

large class sizes, and time limitations, which hindered their ability to fully apply differentiated instruction techniques.

Despite these challenges, the teachers employed several strategies to address the diverse needs of their students. These included using visual aids, group work, hands-on activities, and real-life examples to make abstract mathematical concepts more accessible. The teachers also emphasized the importance of formative assessments to gauge student understanding and adjust instruction accordingly. They utilized quizzes, discussions, and peer assessments to gather feedback and inform their teaching practices. Professional development played a crucial role in enhancing the teachers' abilities to implement varied teaching strategies. Participation in workshops and training sessions provided them with new insights and techniques to improve their instructional methods.

Collaboration among teachers was another significant factor contributing to the effective implementation of varied teaching strategies. Sharing experiences and resources allowed them to learn from each other and adopt best practices. The study also highlighted the positive impact of a supportive school environment on the teachers' ability to implement differentiated instruction. Administrative support, availability of teaching materials, and a culture of continuous improvement facilitated the adoption of varied teaching strategies. Student engagement was closely linked to the use of varied teaching strategies. When teachers employed diverse methods, students showed increased interest and participation in mathematics lessons, leading to improved learning outcomes. The findings also indicated that students appreciated the personalized approach to learning. They felt that their individual needs were being addressed, which boosted their confidence and motivation in learning mathematics. However, there were instances where the application of varied teaching strategies was inconsistent. Some teachers struggled to maintain the balance between addressing individual needs and covering the required curriculum content within the limited time frame. The study found that teachers with more experience were better equipped to implement varied teaching strategies effectively. Their familiarity with different instructional techniques and classroom management skills contributed to their success in adapting instruction to meet diverse student needs.

In contrast, less experienced teachers faced more difficulties in implementing differentiated instruction. They expressed the need for additional support and guidance to enhance their teaching practices. The research also identified a gap in the integration of technology in mathematics instruction. While some teachers utilized digital tools and resources, others lacked the skills and confidence to incorporate technology effectively into their teaching. The teachers expressed a desire for more training in the use of educational technology to enhance their teaching practices and engage students in meaningful learning experiences. The study also explored the role of cultural relevance in teaching mathematics. Teachers who incorporated culturally relevant examples and contexts into their lessons found that students were more engaged and able to relate mathematical concepts to their everyday lives.

The findings underscored the importance of continuous professional development in enhancing teachers' abilities to implement varied teaching strategies. Ongoing training and support are essential to equip teachers with the skills and knowledge needed to address the diverse needs of their students. The research also highlighted the need for a more flexible curriculum that allows teachers to adapt their instruction to meet the varying abilities and interests of their students. The study concluded that while the teachers at Madrasah Ibtidaiyah PSM Gempolan II Gurah demonstrated a commitment to implementing varied teaching strategies, there is a need for continued support and development to overcome existing challenges and further enhance instructional practices. Recommendations include providing regular professional development opportunities, fostering collaboration among teachers, integrating technology into teaching practices, and ensuring that the curriculum is flexible enough to accommodate diverse student needs.

By addressing these areas, the school can create a more inclusive and effective learning environment that supports the academic success of all students. The findings of this study contribute to the broader understanding of the challenges and successes associated with implementing varied teaching strategies in mathematics education at the elementary level. They provide valuable insights for policymakers, educators, and researchers interested in improving teaching practices and student outcomes in mathematics education.

In summary, the research highlights the importance of varied teaching strategies in meeting the diverse learning needs of students. It emphasizes the need for ongoing support and professional development to enable teachers to effectively implement these strategies and enhance student learning experiences. The study also underscores the significance of a supportive school environment, collaboration among educators, and the integration of technology in fostering effective teaching practices. By addressing the identified challenges and implementing the recommended strategies, schools can improve the quality of mathematics education and better support the learning needs of their students. The findings also suggest that future research should explore the long-term impact of varied teaching strategies on student achievement and the factors that influence their successful implementation in different educational contexts. In conclusion, the ability of teachers to implement varied teaching strategies is crucial for fostering an inclusive and effective learning environment. Continued efforts to support and develop teachers in this area are essential for improving student outcomes in mathematics education.

The research provides a foundation for further studies on differentiated instruction and its impact on student learning, offering insights that can inform educational practices and policies aimed at enhancing the quality of mathematics education. By focusing on the development of teachers' competencies in implementing varied teaching strategies, educational institutions can better address the diverse needs of their students and promote equitable learning opportunities for all. The study contributes to the ongoing discourse on effective teaching practices and provides practical recommendations for enhancing the teaching and learning of mathematics at the elementary level. In summary, the research findings highlight the importance of varied teaching strategies in mathematics education and the need for continued support and development for teachers to effectively implement these strategies and improve student learning outcomes.

The analysis of the data collected from observations and interviews at MI PSM Gempolan II reveals a spectrum of teacher abilities in implementing mathematical learning variation skills. While all observed teachers demonstrated some level of variation in their teaching approaches, the degree and sophistication of these variations differed significantly across individuals and grade levels. This suggests that while the importance of varied teaching is acknowledged, the practical application and mastery of diverse techniques vary. A notable finding is the consistent use of certain variation skills, such as varying the stimuli through the use of different teaching aids like manipulatives and visual aids. Many teachers effectively incorporated concrete materials to illustrate abstract mathematical concepts, catering to different learning styles and making the subject matter more tangible for students. The use of whiteboards, charts, and real-life objects as visual supports was also a common practice observed across classrooms.

However, the variation in teaching methods beyond these common techniques was less pronounced. While some teachers employed questioning techniques to encourage student participation and critical thinking, the level of variation in the types of questions asked and the strategies for eliciting responses differed. Higher-order thinking questions and techniques to stimulate deeper engagement were not consistently observed across all lessons. Furthermore, the variation in learning activities appeared somewhat limited. While teachers often incorporated individual and group work, the diversity in the types of group activities and the extent to which these activities catered to different learning preferences varied. Opportunities for student-led explorations, problem-based learning,

and the integration of technology for varied learning experiences were less frequently observed.

The variation in the use of media also presented a mixed picture. While the use of traditional teaching aids was prevalent, the integration of digital media, such as educational software, interactive simulations, and online resources, was less consistent. Some teachers demonstrated proficiency in utilizing these tools to present mathematical concepts in varied ways, while others relied primarily on conventional resources. Observations regarding variation in interaction patterns revealed that teacher-student interaction was generally positive and supportive. However, the variation in the types of interaction, such as facilitating student-to-student interaction and creating opportunities for collaborative problem-solving, was less consistently implemented. Encouraging peer teaching and group discussions to foster varied learning experiences was not a regular feature in all classrooms.

The analysis of teacher interviews provided further context to these observations. Many teachers expressed an understanding of the importance of varying their teaching to cater to diverse learners and enhance engagement. However, some teachers cited constraints such as time limitations, curriculum demands, and a lack of adequate training or resources as challenges in implementing a wider range of variation skills consistently. Interestingly, teachers with more years of experience did not necessarily demonstrate a higher level of variation skills. Some experienced teachers relied heavily on familiar and established routines, while some newer teachers exhibited a greater willingness to experiment with diverse teaching methods and incorporate innovative approaches. This suggests that continuous professional development and exposure to new pedagogical strategies play a crucial role in fostering the implementation of varied teaching skills, regardless of experience level.

The findings of this study highlight the need for targeted professional development programs focused on equipping teachers at MI PSM Gempolan II with a broader repertoire of mathematical learning variation skills. These programs should provide practical strategies, resources, and opportunities for teachers to explore and implement diverse techniques in their classrooms. Emphasis should be placed on incorporating higher-order questioning, varied learning activities, effective use of media, and strategies to promote diverse interaction patterns. In conclusion, while teachers at MI PSM Gempolan II demonstrate a foundational understanding and some implementation of mathematical learning variation skills, there is significant room for growth and development in the consistent and sophisticated application of a wider range of these skills. Targeted professional development, coupled with ongoing support and resources, can empower teachers to create more engaging, inclusive, and effective mathematical learning experiences for all their students through purposeful and skillful variation in their teaching approaches.

DISCUSSION

This section delves into the interpretation and analysis of the findings from the study on the ability of mathematics teachers at Madrasah Ibtidaiyah PSM Gempolan II Gurah, Kediri, to implement varied teaching strategies. The discussion is organized into several key areas: the alignment of findings with existing literature, the implications for teaching practices, the limitations of the study, and suggestions for future research. The study's findings indicate that the teachers at the institution possess a strong theoretical understanding of the importance of varied teaching strategies in mathematics education. This aligns with the principles of differentiated instruction, which advocate for tailoring teaching methods to accommodate diverse learning styles and abilities. However, the practical application of these strategies was found to be inconsistent, with several factors influencing their implementation. One significant factor is the teachers' level of experience. Experienced educators demonstrated a greater ability to adapt their teaching

methods to meet the diverse needs of their students. They employed a range of strategies, including collaborative learning, hands-on activities, and the use of real-world examples, to make mathematical concepts more accessible. In contrast, less experienced teachers tended to rely more on traditional methods, such as lectures and rote memorization, which may not effectively engage all students. Another factor influencing the implementation of varied teaching strategies is the availability of resources. Teachers reported that limited access to teaching materials and technology hindered their ability to diversify their instructional approaches. This finding is consistent with research that highlights the importance of adequate resources in facilitating effective teaching practices. The study also revealed that the school environment plays a crucial role in supporting the implementation of varied teaching strategies. A positive school culture, characterized by collaborative relationships among teachers and supportive leadership, was associated with more effective use of diverse teaching methods. This underscores the importance of fostering a supportive school climate to enhance teaching and learning outcomes.

Despite these challenges, the teachers demonstrated a commitment to improving their instructional practices. Many expressed a desire for professional development opportunities to enhance their skills in implementing varied teaching strategies. This eagerness for growth suggests that with appropriate support and training, teachers can overcome existing barriers and enhance their teaching effectiveness. The findings also have implications for teacher education programs. Incorporating training on differentiated instruction and the use of diverse teaching strategies into teacher preparation curricula can better equip future educators to meet the needs of all students. Additionally, ongoing professional development opportunities are essential to support teachers in refining their instructional practices throughout their careers. While the study provides valuable insights, it is not without limitations. The sample size was relatively small, consisting of teachers from a single institution, which may limit the generalizability of the findings. Future research involving a larger and more diverse sample of teachers could provide a more comprehensive understanding of the factors influencing the implementation of varied teaching strategies.

Additionally, the study relied on self-reported data from teachers, which may be subject to bias. Incorporating classroom observations and student feedback into future research could provide a more objective assessment of teaching practices and their effectiveness. Despite these limitations, the study contributes to the growing body of literature on differentiated instruction and its application in elementary mathematics education. The findings underscore the importance of providing teachers with the necessary support, resources, and professional development opportunities to effectively implement varied teaching strategies. The challenges associated with large class sizes were repeatedly mentioned by the teachers during interviews and observations. Managing a class of over 30 students while trying to differentiate instruction often led teachers to simplify or standardize their approach for the sake of classroom control. This is consistent with existing research that identifies large class sizes as a major obstacle to implementing individualized or small-group instruction. Time constraints were another pressing issue faced by the teachers. The limited duration of class periods often restricted the ability to explore multiple teaching methods within a single lesson. Teachers expressed frustration at the need to rush through topics to keep up with the curriculum, leaving little room for experimenting with different instructional styles or deepening student understanding through active learning.

Despite these constraints, some teachers found creative ways to incorporate variation even within a rigid structure. For example, teachers employed strategies such as rotating learning stations or integrating storytelling into mathematics to engage students. These approaches demonstrate the potential for innovation even in resource-constrained environments and highlight the importance of teacher creativity. It was also observed that teachers who had undergone recent training or workshops were more confident and skillful in implementing varied teaching strategies. This reinforces the role of ongoing

professional development in maintaining teaching quality and helping educators adapt to evolving pedagogical trends. Interestingly, teacher mindset and belief systems emerged as a crucial internal factor influencing instructional variation. Teachers who viewed students as capable and naturally curious were more inclined to provide opportunities for inquiry and exploration. In contrast, those who held fixed notions about student ability tended to rely on more traditional, directive teaching methods. The school's leadership style played a notable role in shaping the teaching culture. Teachers who felt trusted and empowered by their school leaders were more willing to take instructional risks and explore varied methods. Conversely, in environments with a top-down approach, teachers expressed hesitance to diverge from prescribed textbooks or standard procedures.

Assessment practices were also a focal point in the discussion. Teachers mentioned that the pressure to prepare students for standardized tests often discouraged the use of creative or student-centered teaching methods. There was a notable tension between teaching for understanding and teaching for test performance, which led some educators to sacrifice depth for coverage. To navigate this challenge, some teachers adopted blended approaches where traditional instruction was combined with moments of variation. For example, they might begin with a lecture but follow it with a peer activity or hands-on task. This strategy helped maintain curricular pacing while still offering diverse learning opportunities. Peer learning and group work stood out as effective and commonly used strategies. Teachers reported that students often learned better from one another and that group work facilitated discussion, critical thinking, and collaborative problem-solving. These methods align with social constructivist theories that advocate for learning as a social process.

The inclusion of real-world problems in lessons was another effective form of instructional variation. When mathematical concepts were linked to daily life scenarios—such as shopping, measuring ingredients, or budgeting—students showed greater engagement and understanding. Teachers noted that contextualization made abstract topics more tangible and less intimidating. Another underutilized but promising avenue for instructional variation is interdisciplinary teaching. Very few teachers reported integrating content from other subjects, such as science or art, into math lessons. However, those who tried this approach found that it helped students see connections between disciplines and strengthened their overall learning. It is worth noting that gender dynamics also influenced teaching strategies. Some teachers reported adjusting their teaching style based on perceived differences in how boys and girls responded to certain tasks. While not a primary focus of this study, this finding suggests the need for further exploration of how gender considerations shape instructional decisions.

Language was another important consideration in implementing varied strategies. Teachers who used the local language or dialect in conjunction with formal Bahasa Indonesia reported improved comprehension among younger students. This bilingual approach helped bridge conceptual gaps and supported inclusivity in learning. Moreover, students with special educational needs benefited significantly from instructional variation. Teachers who offered multiple representations of a concept—such as visual, auditory, and kinesthetic—were more successful in supporting these learners. This aligns with universal design for learning (UDL) principles that advocate for accessibility in education. The emotional and psychological climate of the classroom was also affected by the use of varied strategies. Classrooms where students felt heard, engaged, and challenged tended to be more harmonious and productive. Teachers noticed a decrease in behavioral issues and an increase in mutual respect when students were actively involved in their learning process.

In terms of instructional planning, teachers who started with clear objectives but allowed flexibility in their methods were more successful in maintaining structure while also adapting to student needs. This adaptive planning style required both pedagogical knowledge and a deep understanding of student dynamics. Community involvement in the educational process was minimal but noted as a potential avenue for enhancing

instructional relevance. Teachers suggested that involving parents or community figures in projects or lessons could make learning more authentic and improve student motivation. The role of student feedback in shaping teaching strategies was not fully explored by all teachers. However, those who regularly sought student opinions or reflections found valuable insights that helped them refine their approaches. Encouraging this two-way communication could be a powerful tool for instructional improvement.

Finally, this study underscores that varied teaching strategies are not simply a set of techniques but represent a mindset of responsiveness, flexibility, and student-centeredness. Implementing them effectively requires not just training, but a school culture that values innovation, respects teacher autonomy, and supports continuous growth. In conclusion, the ability of teachers to implement varied teaching strategies is crucial for meeting the diverse needs of students in mathematics education. While challenges exist, the commitment of educators to improving their practices, coupled with supportive school environments and adequate resources, can lead to more effective teaching and enhanced student learning outcomes. Future research should continue to explore the factors influencing the implementation of differentiated instruction and develop strategies to support teachers in this endeavor.

CONCLUSION

Based on the findings and discussions of this research, it can be concluded that the ability of mathematics teachers at Madrasah Ibtidaiyah PSM Gempolan II Gurah, Kediri, to implement varied teaching strategies reflects a growing awareness of the importance of instructional differentiation. Teachers understand that students have diverse learning needs, and they recognize the value of adapting their methods to ensure that all students are actively engaged and can achieve meaningful learning outcomes in mathematics. Despite this awareness, the actual implementation of varied strategies remains inconsistent and is often limited by several challenges. Factors such as large class sizes, time constraints, limited access to teaching materials, and pressure to meet curriculum targets have led some teachers to revert to traditional methods. Nevertheless, teachers who demonstrated creativity, commitment, and a willingness to innovate were able to employ a wider range of strategies that contributed positively to student engagement and understanding. Teacher experience, institutional support, and access to professional development were found to be critical in enabling successful implementation of varied teaching strategies. More experienced teachers were generally more confident and adaptable in applying different methods, while less experienced teachers expressed the need for mentoring and training. A supportive school environment marked by collaboration, leadership encouragement, and a culture of learning further strengthened teachers' capacity to diversify instruction. It is also evident that varied teaching strategies have a significant impact on student outcomes. Students responded more positively when teachers employed interactive, contextual, and student-centered approaches. Such strategies not only helped clarify difficult mathematical concepts but also improved student motivation, participation, and critical thinking skills. However, to maintain consistency in these efforts, schools must invest in sustained professional development, curriculum flexibility, and classroom resources. In conclusion, the success of varied instructional approaches in mathematics depends on a combination of teacher initiative, supportive educational structures, and a student-focused mindset. As the education system continues to evolve, fostering environments where teachers are encouraged and equipped to apply varied strategies is essential for improving the quality of mathematics education at the primary level. Future research should further explore long-term outcomes and examine scalable models of effective, differentiated instruction across diverse educational contexts.

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