

Implementation of Differentiated Instruction in Increasing Student Participation with Different Learning Styles

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DOI: <https://doi.org/10.62872/b3zt5c63>

Abstract

This study aims to describe the implementation of Differentiated Instruction (DI) by teachers at SMP Negeri 1 Kongbeng and its impact on the participation of students with different learning styles. Departing from the challenge of learning style diversity that is often overlooked in conventional teaching approaches, this study emphasizes the importance of adaptive and responsive strategies to students' individual needs. Using a descriptive qualitative approach, data were collected through in-depth interviews, classroom observations, and documentation studies of teaching materials. The results showed that teachers began to implement differentiation in content, processes, and learning products, but the implementation was still varied and limited. Inhibiting factors included limited training, administrative burden, and lack of structural support and policies that supported DI. However, several local innovations such as learning stations began to show positive impacts on student engagement. These findings underline that the success of DI depends not only on the method, but also on the teacher's pedagogical competence and systemic support. Therefore, the implementation of DI requires synergy between increasing teacher capacity, reforming education policies, and providing adequate resources in order to realize equitable, participatory, and transformative learning, especially in the context of non-urban schools such as SMP Negeri 1 Kongbeng.

Keywords: Differentiated Instruction; Learning Style; Student Participation.

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Received June 07, 2025. Accepted June 20, 2025 Published June 28, 2025

Introduction

The diversity of students' learning styles is one of the most crucial challenges in modern education. The theory of learning styles as proposed by Fleming (2001) through the VARK model (Visual, Auditory, Reading/Writing, Kinesthetic) shows that students do not absorb information in the same way. In practice, many teachers still use a one-way learning approach that is oriented towards lectures or written texts, without considering individual learning preferences. This mismatch has the potential to create gaps in participation and understanding, because students whose learning styles are not accommodated tend to experience boredom, frustration, and even loss of motivation to be actively involved in learning (Nurhayati, 2024). Therefore, this diversity cannot be ignored if the goal of education is to reach every individual fairly and evenly.

Adaptive teaching approaches are a necessity in heterogeneous classroom contexts. Research by Amini et al (2023) does state that empirical evidence on the effectiveness of learning adjustments



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based on learning styles is still debated. However, teacher responsiveness to differences in learning styles remains important in increasing student engagement. This includes not only processing materials in a varied way, but also creating a flexible and inclusive learning environment. Teacher skills in reading student learning characteristics and adapting teaching methods are key factors in building meaningful interactions in the classroom. Thus, the shift from a homogeneous approach to a more differentiated strategy is not only pedagogically ideal, but also practically urgent in responding to the real needs of students in the 21st century education era.

Active student participation in the learning process is not just an indicator of involvement, but a reflection of the meaningfulness of the learning process itself. According to Prihandini et al (2023), students who are truly engaged will demonstrate active behavior such as asking questions, discussing, and showing initiative in learning. However, this participation will not emerge spontaneously if the teaching strategy is not contextual and relevant to the needs and characteristics of students. In the context of a class that is homogeneous in curriculum but heterogeneous in psychology and cognitively, one-way learning actually causes disengagement, especially for students who feel that their style is not accommodated. This condition is further exacerbated by the tendency of schools to assess success only through exam results, without considering how much the learning process is able to activate students' personal and social involvement.

This is where Differentiated Instruction (DI) has strategic value in designing a learning process that is not only inclusive in format, but also relevant in substance. Pasha et al (2023) emphasized that DI prioritizes the principles of flexibility and responsiveness, which allows teachers to change content, processes, products, and learning environments according to students' readiness, interests, and learning profiles. With DI, visual students can be given infographics or videos, while kinesthetic students can be involved in simulations or experiments. This approach not only increases opportunities for student participation, but also deepens their emotional and cognitive involvement in the subject matter (Pohan, 2025). Therefore, the implementation of DI is not just an alternative learning method, but is a strategic step to create a fair, participatory, and transformative classroom amidst the complexity of today's student needs.

However, the success of implementing Differentiated Instruction (DI) does not solely depend on the strategies used, but also on the teacher's pedagogical competence and reflectivity in understanding the needs of students. DI requires teachers to not only be transmitters of material, but also designers of diverse and meaningful learning experiences. This is in line with the view of Sulistianingrum et al (2023) who emphasized that DI requires full awareness of student conditions and a willingness to actively adjust learning. Unfortunately, many teachers have not received adequate training in designing effective differentiation, or even have no pedagogical awareness of the importance of recognizing differences in student learning styles. This risks making DI practices merely administrative formalities without any real impact on participation or learning outcomes.

Furthermore, DI also faces structural challenges in the school environment such as a dense curriculum load, high teacher-student ratio, and limited learning resources. In the context of Indonesian education, these challenges are exacerbated by the pressure of standardized tests and a learning culture that still emphasizes uniformity rather than individual uniqueness. Research by Tas & Minaz (2024) shows that although teachers have positive attitudes towards DI, its implementation tends to be minimal due to institutional barriers and lack of systemic support. Therefore, the successful implementation of DI as a strategy to increase student participation requires commitment from various parties, not only teachers, but also principals, policy makers, and teacher education institutions to build a flexible, reflective, and real-needs-oriented learning system for students.

Amid the urgency of implementing Differentiated Instruction (DI) in responding to the diversity of student learning styles, the reality in the field shows that this practice is still inconsistent and tends to be sporadic. Many teachers face a dilemma between administrative demands, limited planning time, and the need to complete the curriculum uniformly. This is exacerbated by the lack of institutional support

in the form of ongoing training or applicable technical guidance related to DI implementation (Jarnawi et al., 2025). Some teachers even still interpret differentiation narrowly as a variation of tasks alone, without a comprehensive understanding of the differentiation of content, processes, and products according to student learning needs. As a result, this strategy, which should be inclusive and transformative, has lost its effectiveness in increasing student participation, especially those who are not suited to conventional teaching styles.

Furthermore, the obstacles to implementing DI cannot be separated from the learning culture that still emphasizes a homogeneous approach and an orientation towards academic results alone. In the context of formal education, achievement of test scores is often the main indicator of success, while the learning process that accommodates diverse learning styles is often seen as secondary. This paradigm is contrary to the essence of DI which places the process and student involvement as the central point of learning. According to Liou et al (2023), the success of DI is highly dependent on the change in the educational paradigm from teacher-centered to student-centered, which emphasizes meaningfulness and active participation of students. Therefore, research on the implementation of DI is not only important to evaluate the effectiveness of the method, but also to identify the systemic transformations needed so that learning is truly able to serve the needs of all students fairly and sustainably.

Methodology

This study uses a descriptive qualitative approach that aims to describe in depth how the implementation of Differentiated Instruction (DI) is carried out by teachers and how the strategy impacts the participation of students with different learning styles. This approach was chosen because it allows researchers to understand the learning phenomenon in its original context comprehensively and meaningfully, especially in complex situations that cannot be measured quantitatively (Creswell, 2014). The main focus of this study is to explore teacher practices in adapting learning content, processes, and products according to student needs, and the extent to which the approach is able to increase student engagement in the learning process.

The research location was determined purposively, namely at SMP Negeri 1 Kongbeng, East Kutai Regency, East Kalimantan. This school was chosen because it has demonstrated efforts to implement the principles of differentiated learning, both through independent teacher initiatives and through training programs held by the local education office. The research subjects consisted of subject teachers who actively implement DI and students who represent various learning styles, such as visual, auditory, and kinesthetic. Data collection techniques were carried out through in-depth interviews with teachers, direct observation of classroom learning practices, and documentation studies of teaching tools such as lesson plans, teaching materials, and student work results.

The collected data were analyzed using the interactive model of Miles and Huberman (1994), which includes three main stages: data reduction, data presentation, and drawing conclusions. Data reduction was carried out to focus on relevant information, while data presentation used narratives and thematic findings to organize the results of observations and interviews. Drawing conclusions was done through identifying patterns and relationships between DI implementation and student participation in learning. The validity of the data was maintained through triangulation techniques of sources and methods, as well as through the member checking process to ensure the appropriateness of the researcher's interpretation with the real experiences of the subjects. With this approach, it is hoped that the study can provide an accurate and reflective contextual picture of the practice of Differentiated Instruction at SMP Negeri 1 Kongbeng as a representation of the implementation of differentiated learning in non-urban areas.

Result and Discussion

1. Practice of Implementing Differentiated Instruction by Teachers at SMP Negeri 1 Kongbeng

The practice of Differentiated Instruction (DI) carried out by teachers at SMP Negeri 1 Kongbeng is a response to the diversity of students' needs and learning styles that are increasingly complex in the era of 21st century education. Classroom observations show that some teachers have begun to apply differentiation in three main aspects: content, process, and learning products. In science lessons, for example, teachers present material through a combination of digital text, experimental videos, and live demonstrations to reach students with visual and kinesthetic preferences. This is in line with the view of Purwanti et al (2024), who emphasize that DI is a proactive approach in designing and delivering curriculum to suit students' learning readiness, interests, and learning profiles.

An in-depth interview with one of the science teachers revealed that,

"The students in my class are very diverse, some understand quickly if I explain through pictures or videos, but there are also those who have to try directly before they understand. Therefore, I usually prepare two approaches, one is more visual, the other is practice-based."

This statement reinforces that teachers are beginning to realize that learning success cannot rely on a uniform approach. Strategies like this reflect the principles of constructivist learning, namely providing space for students to build knowledge based on their respective learning experiences and preferences (Safura, 2025).

However, the level of consistency and depth of DI implementation in these schools still varies greatly. The results of interviews with Indonesian language teachers showed that,

"I know about differentiated learning from online training, but I don't fully understand how to adjust learning targets according to students' initial abilities. Usually I just give them assignments."

This shows that despite pedagogical awareness, its implementation is still at the basic level or surface differentiation. As stated by Pohan (2025), many teachers face challenges in implementing DI in depth due to the lack of systematic training, especially in the aspects of flexible curriculum planning and adaptive formative assessment.

Contextual factors such as infrastructure, teacher-student ratios, and administrative burdens are also significant barriers. Some teachers expressed that time constraints and limited devices prevented them from making optimal learning adjustments.

"If there are 35 students, and each child must be given a different approach, I am sometimes overwhelmed. Not to mention having to fill in the administration," said a Mathematics teacher

This is in line with research findings by Westbroek et al (2020) which states that one of the main challenges in DI is the time and energy needed to design and implement learning that is appropriate to each student's profile.

However, some local innovations still emerge. For example, in social studies lessons, teachers apply the learning station model, where students move to different corners of the classroom according to different tasks based on their learning styles. This strategy is effective in accommodating the diversity of learning styles and providing space for individual exploration. This approach reflects the principles of Universal Design for Learning (CAST, 2018), namely providing various ways of engagement, information representation, and expression in learning. Overall, DI practices at SMP Negeri 1 Kongbeng

are moving from the awareness stage to the adaptation stage, although they have not yet fully achieved systemic integration into the school's learning culture.

Thus, the practice of Differentiated Instruction at SMP Negeri 1 Kongbeng shows promising progress, but also requires strengthening through ongoing training, collaboration between teachers, and structural support from the school. Integration of modern learning theories and reflective practices is the key so that differentiation is not just a discourse, but becomes the foundation of fair and meaningful learning.

2. Responses and Participation of Students with Different Learning Styles to Differentiated Learning

The concept of Differentiated Instruction is strongly grounded in constructivist theory, which emphasizes that effective learning occurs when students actively construct meaning based on their individual experiences and learning preferences. Vygotsky (1978) emphasized the importance of the Zone of Proximal Development (ZPD), which is the distance between what students can do independently and what can be achieved with appropriate guidance. Differentiated learning is designed to position students right in that zone, taking into account their readiness, interests, and learning styles, so that they can achieve optimal cognitive development. In the context of SMP Negeri 1 Kongbeng, when learning strategies fail to touch students' ZPD because they do not match their learning preferences, cognitive engagement becomes low.

Furthermore, Howard Gardner (1983) with his Multiple Intelligences theory reinforces the importance of differentiation in learning. Gardner shows that each individual has different dominant types of intelligence, such as visual-spatial, musical, kinesthetic, and interpersonal intelligence. In an interview with a grade VIII teacher, it was stated that:

"Kids who like to draw or make mind maps usually understand quickly. But others say 'I don't understand what to do with this'."

This statement reflects that learning that is too biased towards one type of intelligence or learning modality tends to benefit only some students, and ignores the potential of other students. DI seeks to answer this challenge by modifying content, processes, and products to suit the intelligence profile and learning styles of students.

In terms of emotional involvement and motivation, the DI approach is also supported by Eccles and Wigfield's (2002) Expectancy-Value theory, which states that learning motivation is influenced by two things: students' expectations of success and the value they place on the task. When their learning styles are taken into account and the material is presented in a relevant way, students have higher expectations for success and feel that learning has personal meaning. Conversely, when the teaching method feels far from their learning style, students not only find it difficult to understand, but also lose motivation because they feel that their efforts will not pay off (Cahyono, 2023).

Empirical research by Jarnawi et al (2025) shows that systematic and reflective differentiated learning contributes to significant improvements in active participation, academic achievement, and student learning well-being. However, they also emphasize that the success of DI requires careful planning, ongoing formative assessment, and teachers' ability to manage complex classroom dynamics. This is in line with observations in the field that at SMP Negeri 1 Kongbeng, teachers who successfully implemented DI consistently and adaptively showed increased student engagement across learning styles. Conversely, in classes that tend to use uniform methods, there were groups of students who were left behind or did not show optimal participation.

Thus, differentiated learning is not just about "varying" media or methods, but rather developing learning strategies based on data and a deep understanding of students as unique individuals. Effective implementation of DI is a concrete form of inclusive and equitable education, which allows all students

regardless of their learning style to grow and develop in a responsive and supportive learning environment.

3. Supporting and Inhibiting Factors for the Implementation of Differentiated Instruction in the Context of Schools in Outlying Areas

The implementation of Differentiated Instruction (DI) at SMP Negeri 1 Kongbeng faces significant challenges that originate from both internal and external factors of the school. From the internal side, the professional capacity of teachers is one of the main obstacles. Many teachers have a high commitment to teaching, but have not received adequate training on the concept and practice of DI. This is reflected in the statement of one of the Indonesian language teachers who said,

"We've heard about learning that adapts to children's learning styles, but we've never had any special training. So sometimes we guess for ourselves which method is suitable."

This statement shows that teachers' understanding of differentiation is still intuitive and not based on systematic pedagogical strategies. This is in line with the view of Nurlaili et al (2024), who emphasized that teachers need to understand aspects of students' readiness, interests, and learning profiles in depth to design responsive learning. However, without ongoing training, DI implementation tends to be sporadic and inconsistent.

Teachers' attitudes toward learning innovation are also important factors that cannot be ignored. Amidst administrative demands and high workloads, teachers often view the DI approach as a complex and time-consuming method. A science teacher said,

"If there is a new way, we are interested, but sometimes we also think, will this create more work?"

This expression shows the ambivalence between the interest in innovation and the fear of additional burden. In this context, the differentiation approach requires not only technical changes, but also the restructuring of the teacher's work organization. The high teaching load also strengthens this resistance. In schools with limited teachers, one person can teach several classes and subjects, making it difficult to create different lesson plans according to students' needs. The Mathematics teacher said,

"If we have to make different lesson plans for each student, it seems really hard."

This statement emphasizes that the challenge is not just a lack of capacity, but also structural limitations in the allocation of time and human resources. Rahman & Kurniawan (2025) emphasize the importance of structural support such as collaborative time and workload adjustments so that pedagogical innovations such as DI can be implemented optimally.

External factors such as principal support and infrastructure conditions also influence the effectiveness of DI implementation. At SMP Negeri 1 Kongbeng, the principal has shown an inclusive vision in learning, but has not been fully able to distribute supporting facilities. A curriculum staff said,

"If you ask for an LCD or other aids, sometimes you have to borrow from another class."

This condition reflects the gap between leadership aspirations and logistical realities. According to Irawan et al (2025), transformational leadership in education must be able to create a collaborative climate while ensuring the availability of facilities as a foundation for innovation. Without the support of flexible classrooms and adequate technology, differentiation in student grouping, learning media, or alternative assessments becomes very limited. This leads to the use of homogeneous methods, even though teachers are aware of the diversity of students' learning abilities in the classroom.

On the other hand, the policy of the East Kutai Education Office has not placed the DI approach as a priority for teacher training in the region. One senior teacher revealed that so far the training that was attended focused more on the general curriculum, not a teaching approach that was responsive to student diversity. He said,

“No one has ever specifically discussed strategies for teaching students with different learning needs.”

This shows that the training policy is still generic and not contextual to the needs of schools in the outskirts. Angelia et al (2025) emphasized that effective professional development must be contextual, sustainable, and focused on real practice. Without policies that affirm local conditions, including incentives and special attention for teachers in 3T areas, efforts to implement DI will tend to be half-hearted. This mismatch between macro policies and micro needs is what prevents learning innovations such as DI from growing organically in the outskirts.

Overall, the implementation of Differentiated Instruction at SMP Negeri 1 Kongbeng illustrates the existence of a systemic imbalance between modern pedagogical demands and the operational realities of suburban schools. Efforts to realize learning that is responsive to student diversity must begin with the reconstruction of training policies, strengthening school leadership, and providing real structural support to teachers. Pedagogical innovations such as DI cannot only be driven through jargon or administrative instructions alone, but require an educational ecosystem that supports each other and affirms differences. Thus, the challenges of implementing DI in suburban schools are not only technical issues, but also socio-political problems in equalizing the quality of national education

Conclusion

Differentiated Instruction (DI) practices at SMP Negeri 1 Kongbeng reflect an initial response to the increasingly complex diversity of student learning styles in the modern education era. Teachers have begun to implement differentiation in aspects of content, process, and learning products, although still at varying levels. This implementation is supported by the awareness that a uniform approach is no longer relevant in heterogeneous classes. Interviews with teachers indicate that some have integrated visual strategies and direct practice side by side. However, limited training makes teachers' understanding of DI still shallow and intuitive. Implementation often stops at the surface, such as providing assignment choices without in-depth adjustments to learning strategies. Structural barriers such as limited time, facilities, and administrative burdens make it difficult for teachers to adopt this approach consistently. The principal's less than optimal support and the minimal priority of DI training policies from the office also strengthen the implementation gap. Even so, the emergence of local initiatives such as the use of learning stations shows the potential for transformation from below. DI has been shown to increase student motivation and participation if carried out reflectively and systematically. However, without structural reform and ongoing support, the implementation of DI will remain sporadic. For this reason, strengthening teacher capacity and policy synergy are the main prerequisites. With the integration of learning theory and practical innovation, DI can be a path towards inclusive and equitable learning.

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