



## The Concept of Differentiated Learning in Accommodating Student Diversity: Implementation of Pedagogical Competence at SMK Negeri 1 Lahusa

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### ABSTRACT

*The diversity of student characteristics presents both a challenge and an opportunity in the field of education, necessitating teaching approaches that are adaptive and inclusive. One relevant approach to address this challenge is differentiated instruction, a deliberately designed learning strategy that adjusts the processes, content, and products of learning in consideration of each student's readiness, interests, and learning profile. In this context, teachers' pedagogical competence serves as an essential component determining the successful implementation of such an approach within the school environment. This study aims to describe the implementation of differentiated instruction as a tangible manifestation of teachers' pedagogical competence at SMK Negeri 1 Lahusa. Employing a qualitative approach with a descriptive method, data were collected through direct classroom observations, in-depth interviews with teachers and the school principal, as well as document analysis of lesson plans, teaching modules, and student learning evaluation results. The findings indicate that most teachers have applied the principles of differentiated instruction, particularly in selecting instructional materials aligned with students' readiness levels, varying teaching methods to accommodate different learning styles, and offering alternative products that allow students to express their understanding in diverse ways. However, the implementation still faces several obstacles, including limited time, the lack of specific advanced training on differentiation, and constraints in supporting resources. Therefore, sustained support from the school is required in the form of practical pedagogical training and strengthened supervisory systems that encourage reflection and continuous improvement of differentiation practices. In this way, differentiated instruction can be optimized as an effective strategy to accommodate student diversity and enhance the quality of learning in vocational secondary education.*

**Keywords:** *Differentiated learning, pedagogical competence, student diversity, vocational high school, learning strategies*

## INTRODUCTION

Student diversity within educational settings is an undeniable reality in the dynamics of 21st-century learning. Within a single classroom, teachers encounter a complex array of individual characteristics, encompassing differences in cognitive abilities, learning styles, interests, cultural backgrounds, and socio-economic conditions (Tomlinson, 2017). This diversity not only reflects the broader social reality but also demands innovation and adaptation in teaching practices to ensure that the educational process remains truly inclusive and equitable for all learners. Uniform teaching approaches that overlook individual student needs risk perpetuating gaps in learning achievement and inhibiting the optimal development of each learner's potential (Heacox, 2012). Differentiated learning emerges as a highly relevant pedagogical solution to address such diversity. Differentiated instruction is a deliberate and systematic teaching strategy designed to accommodate individual differences among students by adjusting the content (learning materials), process (methods of learning), and product (learning outcomes) according to each student's readiness, interests, and learning profile (Tomlinson & Imbeau, 2010). The philosophical foundation of this approach lies in the belief that every student possesses a unique way, pace, and preference for learning, rendering a single, standardized instructional model inadequate. Consequently, teachers must be capable of identifying learners' needs and designing instructional strategies that are both flexible and responsive to these differences (Hall, Strangman, & Meyer, 2011). The successful implementation of differentiated instruction is intrinsically linked to a teacher's pedagogical competence—one of the four core competencies mandated for professional educators under the Regulation of the Minister of National Education of the Republic of Indonesia No. 16 of 2007 (Kemdiknas, 2007). Pedagogical competence includes several critical abilities, such as understanding students' characteristics from various perspectives, designing appropriate instructional plans, conducting educational and dialogic teaching, and evaluating as well as reflecting on both the process and outcomes of learning (Shulman, 1987). Within the framework of differentiated learning, pedagogical competence serves as the foundation for making instructional decisions that equitably and meaningfully address the needs of all students.

At SMK Negeri 1 Lahusa, the diversity of students is particularly complex due to the institution's role in accommodating learners from multiple vocational specializations, each bringing varied geographical, socio-cultural, and academic backgrounds. Teachers in this school face the tangible challenge of preparing and delivering lessons that can meet the needs of all students, including those who struggle academically and those who demonstrate higher potential. As such, the application of differentiated learning becomes a strategic component in enhancing the quality of educational services offered (Santrock, 2018). Preliminary observations at SMK Negeri 1 Lahusa reveal that many teachers have begun to apply differentiation principles, particularly in selecting instructional materials aligned with students' readiness levels, employing varied teaching methods to cater to different learning styles, and offering multiple product options for students to express their understanding creatively. For instance, in vocational subjects, some teachers adapt project-based tasks according to students' skill mastery levels, allowing for tiered assignments and flexible deadlines (Tomlinson, 2017). However, despite these positive practices, implementation is not without obstacles. Common challenges include limited

instructional time, a lack of specialized training on differentiation techniques, and constraints in instructional resources and facilities (Heacox, 2012). Addressing these challenges requires sustained institutional support. This includes providing teachers with continuous professional development in applied pedagogical strategies, particularly those tailored to differentiated instruction in vocational contexts (Darling-Hammond et al., 2020). Furthermore, strengthening the school's supervision and mentoring system can foster reflective practice and encourage consistent improvement in the execution of differentiated strategies. Without such systemic support, differentiation risks being implemented inconsistently, reducing its effectiveness in promoting equity and inclusion (Hall et al., 2011).

The significance of this study lies in its focus on how differentiated instruction is operationalized in a vocational high school setting—a context often overlooked in existing literature, which tends to prioritize general education environments. By examining the practices of teachers at SMK Negeri 1 Lahusa, this research aims to document not only the current state of differentiated instruction but also its alignment with the essential elements of pedagogical competence. The findings are expected to offer practical recommendations for enhancing inclusive and equitable teaching practices in vocational education. Ultimately, differentiated learning should be viewed not as an optional teaching enhancement but as a fundamental pedagogical approach in addressing the realities of student diversity. When grounded in strong pedagogical competence, differentiation can transform the learning environment into one that actively supports all learners, regardless of their starting point, to achieve meaningful educational outcomes (Tomlinson & Imbeau, 2010). In doing so, education fulfills its democratic mission—to provide each learner with the opportunity to develop their fullest potential in preparation for both personal and societal contributions.

## **METHODS**

This study employed a qualitative approach with a descriptive method, aiming to obtain an in-depth understanding of how differentiated instruction is implemented by teachers at SMK Negeri 1 Lahusa. The qualitative approach was chosen because it aligns with the research objective of exploring phenomena in a contextual, holistic, and natural manner, particularly regarding the implementation of instructional strategies tailored to the diverse characteristics of students (Creswell & Poth, 2018). The central focus of this research lies in examining the ways teachers apply the principles of differentiated instruction in their daily teaching practices and the extent to which these practices reflect their mastery and application of pedagogical competence in addressing student diversity. The subjects of this study were teachers from three primary vocational programs offered at SMK Negeri 1 Lahusa: Computer and Network Engineering, Accounting and Institutional Finance, and Agribusiness for Food Crops and Horticulture. Participant selection was conducted using purposive sampling, with specific criteria that included teachers who had attended training related to the Kurikulum Merdeka and who had direct experience implementing differentiated learning strategies in the classroom. This selection process

ensured that the data were obtained from informants who were directly relevant to, and actively engaged in, the research context (Patton, 2015).

Data collection employed three main techniques: in-depth interviews, classroom observations, and document analysis. Semi-structured interviews were conducted with both teachers and the school principal to gather information regarding their understanding, strategies, and challenges in implementing differentiated instruction. Classroom observations allowed for direct examination of teaching and learning processes, including teacher-student interactions, adjustments to content, varied learning processes, and alternative forms of assessment. Document analysis focused on instructional tools such as lesson plans (*Rencana Pelaksanaan Pembelajaran* or RPP), teaching modules, and assessment instruments used by teachers to support the practice of differentiated learning. This triangulated data collection approach strengthened the credibility of the findings by providing multiple perspectives on the same phenomenon (Miles, Huberman, & Saldaña, 2014). The collected data were analyzed thematically, following the stages of qualitative data analysis: data reduction, data display, and conclusion drawing. Data reduction involved filtering and organizing information that was most relevant to the research focus. The data display was presented in the form of narrative descriptions, facilitating the interpretation of findings and enabling the identification of key patterns. Finally, conclusions were drawn inductively, based on thematic patterns emerging from the field data (Braun & Clarke, 2006). To ensure the validity and reliability of the findings, this research employed source and method triangulation. Source triangulation involved comparing information obtained from interviews with teachers, observations of classroom practices, and the content of teaching documents. Method triangulation was carried out by employing multiple data collection techniques—interviews, observations, and document analysis—to cross-verify and confirm the consistency of the information gathered (Flick, 2018). By integrating these triangulation techniques, the study sought to enhance the credibility, dependability, and confirmability of the research results, thus providing a comprehensive portrayal of how differentiated instruction is practiced within the vocational high school context.

## RESULT AND DISCUSSION

The purpose of this study is to identify and describe the implementation of differentiated learning as a concrete manifestation of teachers' pedagogical competence in accommodating student diversity at SMK Negeri 1 Lahusa. Based on the data collection and analysis, five main themes emerged as the focus of discussion: (1) the profile of student diversity, (2) the implementation of differentiated learning, (3) teachers' pedagogical competence, (4) challenges in implementation, and (5) strategies for strengthening implementation. These five themes are interrelated and collectively form a holistic picture of the dynamics of differentiated learning in the vocational education context (Tomlinson, 2014).

### ***Profile of Student Diversity at SMK Negeri 1 Lahusa***

SMK Negeri 1 Lahusa is a vocational education institution located in South Nias Regency, North Sumatra Province, which enrolls students from various villages and regions with significant differences in social, economic, and cultural backgrounds. This results in highly heterogeneous classroom conditions, both in cognitive and non-cognitive aspects. In terms of academic ability, there is a wide variation in comprehension and learning readiness among students. For example, in the Computer and Network Engineering department, some students demonstrate relatively high mastery of technology and computer logic, while others struggle to grasp basic concepts. Similar conditions occur in the Accounting and Institutional Finance department, where some students can complete accounting exercises competently, whereas others require intensive guidance (Hall, 2003). Teachers also observe differences in students' learning styles. Some display a visual preference, engaging more effectively with diagrams, images, and videos, while others prefer auditory approaches through discussions and verbal explanations. Additionally, some students show a kinesthetic learning style, understanding concepts better through hands-on practice and concrete experiences. These variations compel teachers to employ multiple teaching methods rather than relying on a single approach, ensuring accessibility for all learning profiles (Pashler, 2008). Student interest in subjects also varies widely, influenced by family background, career aspirations, and prior learning experiences. For example, students from farming families often show higher interest in agribusiness subjects, whereas those accustomed to using digital devices tend to gravitate toward technology and computing subjects.

### ***Implementation of Differentiated Learning***

In response to this diversity, teachers at SMK Negeri 1 Lahusa have gradually adopted differentiated learning principles, focusing on three main aspects: content differentiation, process differentiation, and product differentiation (Heacox, 2012). Content differentiation is implemented by adjusting instructional materials to students' readiness levels. Informal diagnostic assessments are conducted before instruction to map students' initial abilities, forming the basis for grouping and designing varied materials. Higher-readiness students receive challenging real-world case studies to stimulate critical thinking, while lower-readiness students are provided with foundational reinforcement materials and close guidance. Process differentiation is achieved through varied teaching methods adapted to students' learning styles, including group discussions, simulations, experiments, project-based learning, and digital learning media. Observations show that teachers design activities to match students' preferences, such as providing accounting software simulations for kinesthetic learners and infographics for visual learners. Product differentiation is reflected in flexible assessment options, allowing students to demonstrate understanding through digital presentations, posters, written reports, or explanatory videos, supported by progressive formative assessments rather than relying solely on final outcomes (Anderson, 2007).

### ***Teachers' Pedagogical Competence in Differentiated Learning***

The findings indicate that teachers generally possess adequate conceptual understanding of differentiated learning and demonstrate pedagogical competence in recognizing student characteristics, designing relevant lessons, and delivering adaptive instruction. However, much of the needs analysis relies on teachers' intuition and personal experience rather than systematically documented processes. While some lesson plans and teaching modules include variations in content, process, and product, these documents often lack detailed differentiation strategies. Reflection practices are mostly informal and undocumented, limiting their potential for professional development (Stronge, 2018). Despite the positive progress, teachers face several challenges. The primary obstacle is limited time for designing individualized lesson plans, as differentiated instruction requires substantial preparation for materials, activities, and assessments tailored to multiple student groups. Heavy administrative workloads often hinder full implementation. In addition, inadequate facilities—such as limited access to projectors, computers, or stable internet—restrict teachers' ability to integrate digital resources, which are essential for supporting visual and auditory learners. Furthermore, some students have low digital literacy, which hampers equitable access to technology-based learning opportunities (UNESCO, 2020).

### ***Strategies for Strengthening Implementation***

To address these challenges, the school leadership and curriculum development team have introduced several strategies, including internal teacher training workshops focused on differentiated learning practices, collaborative micro-teaching sessions, and the establishment of a Professional Learning Community (PLC) for ongoing reflection and peer sharing. Teachers are also encouraged to utilize digital platforms such as Google Classroom, Canva, and Quizizz to create varied instructional materials and assessments. Furthermore, teachers are urged to document the differentiation process in a learning portfolio, which serves both as an academic supervision tool and as a database for continuous instructional improvement (DuFour, 2008).

### **Conclusion**

Differentiated learning at SMK Negeri 1 Lahusa has shown promising progress as part of the implementation of teachers' pedagogical competence in addressing the challenges posed by the diverse characteristics of students. The findings indicate that teachers at this school have begun to recognize the importance of tailoring learning approaches to differences in students' readiness, interests, and learning styles. This is reflected in the application of differentiation across the dimensions of content, process, and product. Such efforts clearly demonstrate that teachers are moving away from uniform instructional strategies, instead striving to design meaningful and relevant learning experiences that address the needs of each individual in the classroom. Teachers'

understanding of student characteristics, supported by initial diagnostic assessments and more flexible planning, serves as evidence that their pedagogical competence has been applied in real teaching contexts. Rather than relying solely on conventional content delivery, teachers are increasingly developing varied instructional methods and media that allow students to learn according to their strengths and needs. Nonetheless, practical implementation still encounters several challenges, both technical and structural. These include limited time for designing differentiated lessons, inadequate learning facilities and resources, low digital literacy among some students, and a heavy administrative workload for teachers. Such factors hinder the development of optimal and sustainable differentiated learning practices. Accordingly, this study recommends several strategic measures to strengthen the future implementation of differentiated learning. First, enhancing teachers' capacity in differentiation-oriented instructional design is essential. Ongoing, practice-based training is crucial to equip teachers with the technical and pedagogical skills needed to manage heterogeneous classrooms effectively. Second, the provision of adaptive learning resources—ranging from digital tools and diverse teaching media to other supporting infrastructure—constitutes a key factor in ensuring the success of differentiation. Third, fostering a reflective culture within the school environment through professional learning communities and constructive academic supervision will encourage teachers to continuously refine their teaching practices based on evaluation outcomes and feedback from the learning process. Through systemic efforts involving teachers, school management, and other stakeholders, differentiated learning can serve as an effective instrument for realizing equitable, inclusive, and learner-centered education. Consistent implementation combined with sustained capacity building will contribute significantly to improving the quality of education at SMK Negeri 1 Lahusa, while also offering a model of best practice for other educational institutions in regions with similar characteristics.

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