

Digital-Based Differentiated Learning Management (A Case Study Of Elementary School Teachers In Kendari City)

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ABSTRACT

The purpose of this study is to analyze and reveal in more depth the implementation of digital-based differentiated learning in elementary school education units in Kendari City, as well as the obstacles faced by teachers, and to provide solutions for the implementation of learning in the Merdeka Belajar Curriculum is carried out optimally. This was a descriptive study using a qualitative case study approach. Purposive sampling was used for informant determination. Data analysis techniques with data collection, data reduction, data presentation, and conclusions and verification. The results of the study show that the Merdeka Belajar program in elementary school education units in Kendari City has been implemented in stages. The implementation of digital-based differentiated learning is based on the principle that teachers create learning strategies by focusing on the categories of content/content, processes, products, and environments that are adjusted to the needs or conditions of students. The obstacles related to the curriculum often change, which causes confusion and hampers the education process. Efforts are made by teachers to carry out planning at the beginning so that the management of Differentiated Learning can run well and carry out professional development..

Keywords: Educational Management, Differentiated Learning, Digitalization.

1. INTRODUCTION

To continue to improve the quality of education in Indonesia, the spirit of education lies in the curriculum as a guideline for teacher learning [1]. The curriculum that is implemented develops, adapts to educational units, and has regional potential, and it is necessary to evaluate the effectiveness of the implementation of the curriculum. Indarta et al., [2] explained that the development of curriculum improvements will be said to be effective if the results of the development are in accordance with the demands and needs, relevance, flexibility, continuity, practicality, and effectiveness. Therefore, curriculum development should have a strong foundation and be principled to support the achievement of educational goals [3].

The current Merdeka Curriculum with the concept of independent learning in elementary schools provides "freedom" for education implementers, especially teachers and principals, in compiling, developing and implementing the curriculum based on the potential and needs of students and schools [4] [5]. A differentiated learning approach exists in the Merdeka Curriculum. This learning method helps teachers accommodate differences in students' abilities, interests, and learning styles so that they can freely learn according to their potential and abilities [6]. Differentiated learning strategies can create diverse classes by providing opportunities for students to gain content, process ideas, and improve their learning outcomes so that they can learn more effectively [7]. According to Marlina [8], differentiated learning is a cyclical process of identifying students and responding to their learning based on differences. Differentiated learning is the process of teaching and learning for students with different abilities in a class. The goal is to maximize individual growth and success by meeting students at their ability level and assisting them in the learning process [9]. Hall [10] explains that differentiated learning is the process of recognizing variations in students' background knowledge, readiness, language, learning preferences, and interests, and then responds by planning a varied approach to what students should learn, how they learn it, and how they show their learning outcomes.

Differentiated learning requires educators to pay attention to and take action to meet the specific needs of students [11]. The description of the term differentiation is specific to each domain, as in education, where differentiation basically means adjusting teaching to meet the needs of specific students and the way they learn [12]. Differentiation is a way of thinking about teaching and learning [13]. According to Puspitasari and Walujo [14], differentiation can be a solution to solve problems regarding the diversity of student abilities when learning in one class, namely, a pleasant learning atmosphere, speaking practice, collaborative learning, and selection of materials and learning processes. The differentiated learning process has several stages of application.

Differentiated learning allows teachers to view the learning process from multiple perspectives by adapting the learning approach to students' needs, interests, and readiness. Subban [15] stated that differentiated learning is a pedagogical approach that emphasizes the importance of adapting teaching strategies to suit the individual needs of students in a heterogeneous class. Along with the development of times, learning and teaching materials have also undergone transformation, especially in the presence of digital technology. However, in practice, various obstacles remain, such as teachers who have not fully adopted the digital-based differentiated learning model, limited teacher experience in implementing this model, and inequality in technology access between schools. Anderson [16] emphasized that effective learning differentiation requires systematic planning and teacher awareness of the diversity of learning styles and support for the use of appropriate technology. In addition, Wormeli [17] and Mishra and Koehler [18] stated that teachers must be able to design flexible learning, both in content, process, and learning products, in order to meet the needs of all students fairly and adaptively. Therefore, teachers are required to not only manage individual differences in students but also integrate technology effectively into learning strategies to create an inclusive and adaptive learning process.

This condition becomes a complex problem. Based on this, this study was conducted to see how the role of digital-based differentiated learning management in the Merdeka curriculum in elementary education units is both in implementation, obstacles, and efforts that have been made to implement and manage digital-based differentiated learning. In addition, this study adds an environmentally differentiated learning strategy as a new aspect that is expected to be an alternative for future development to complement the existing differentiated learning management. However, this study was also conducted because, in the end, this differentiated learning method is important not only for inclusive schools, but also for regular elementary schools to develop the potential of students, and there is no complete understanding of digital-based differentiated learning management in the Merdeka Curriculum by teachers, because the Merdeka Curriculum has just been made mandatory in 2024 as the National Curriculum. It is hoped that this can be clearly understood by delving deeper into the concept, application, and implementation of Digital-Based Differentiated Learning Management in Elementary School Education Units.

2. METHOD

This type of descriptive research uses a qualitative case study approach that investigates phenomena in real-life contexts. This was a single instrumental case study. In this study, researchers pay attention to and examine an issue that interests them and use a case as a means (instrument) to describe it in detail. This study was conducted at an Elementary School Education Unit in Kendari City, Southeast Sulawesi Province, Indonesia. The informants of this study were purposively selected based on the criteria that they had knowledge related to the implementation of digital-based differentiated learning management. The key informants from the research were principals, teachers, and students. The data collection process for this study used several sources: interviews, Focus Group Discussions, direct observation, documentation, archival recordings, and participant observation [19]. The data collected from the field process were then analyzed directly through data collection, data reduction, data presentation, conclusions, and verification. To validate the data, seven credibility methods were used by Lincoln and Guba [20]: (1) extending the time spent at the research location, (2) conducting more diligent observations/interviews, and (3) testing through triangulation, through: (i) method triangulation, namely observation methods, interview methods, documentation, and focused discussions; (ii) data source triangulation, namely between one person and another or between one person on two different occasions, for example between night and day; (4) holding discussions with colleagues; (5) conducting negative case analysis; (6) conducting reference adequacy checks; and (7) conducting member checks.

3. RESULTS AND DISCUSSION

Digital-Based Differentiated Learning Management in the Merdeka Curriculum in Elementary Schools in Kendari City

The Merdeka Curriculum Program aims to provide freedom and independence to students in choosing an educational path that suits their interests, talent, and needs. This transformation emphasizes the importance of well-being in the learning process in the school environment. Elementary schools in Kendari face challenges in implementing various learning strategies, especially differentiated learning in the Merdeka Curriculum, which highlights the readiness of educators and the availability of resources, including teaching materials that are relevant to the learning approach. To prepare relevant educators, management training related to the creation, compilation, and planning of classroom learning is needed. Fallah

[21] stated that one of the goals of learning management is to create an innovative, creative and active learning atmosphere and learning process so that students can develop the potential and skills needed for themselves.

Teachers can utilize learning strategies productively, according to the conditions of each school. Achieving educational goals effectively and efficiently. Based on the results of the interviews conducted, it can be explained that the latest Merdeka curriculum creates a more relevant education system according to the demands of the times, adjusted to each educational unit in schools that are more flexible but still centered on students, with the aim of producing a generation that is ready to face the future. Main Characteristics of Differentiated Learning Management in the Merdeka Curriculum [22] 1) Student-centered: Learning is designed based on the interests, talents, and learning styles of students, assessments are more formative and ongoing to monitor student development, and learning activities are more interactive and actively involve students. 2) Flexibility: The curriculum can be adjusted to the conditions and needs of the school and students, teachers have the freedom to choose methods, media, and learning resources, and learning plans can be adapted according to the development of the situation. 3) Collaboration: Teachers, students, parents, and the school community work together to create a conducive learning environment, and there is collaboration among teachers in developing learning materials. 4) Project-based: Learning is more oriented towards projects that are relevant to real life, and students are invited to solve problems and develop critical thinking skills. 5) Utilization of Technology: Technology is used as an effective and efficient learning tool, and online learning platforms and educational applications can be utilized to support the learning process.

Digital transformation in education has brought about revolutionary changes in education, changing the way we learn and teach to be more interactive, efficient, dynamic, and open to global access. The learning materials studied are more varied, not only in verbal form but also in text, visual, audio, and motion. Digital-based differentiated learning can be implemented using digital platforms and applications that support differentiation. Therefore, digital-based differentiated learning management is a dynamic process that requires the cooperation and commitment of various parties. By implementing effective learning management principles, the quality of learning can be improved and students with different needs can achieve their best potential.

Implementation of Digital-Based Differentiated Learning Applied to Elementary Schools in Kendari City

Differentiated learning has not been implemented massively in Indonesia in general and in Kendari City, particularly due to limited learning resources on the implementation of differentiated learning in accordance with Indonesian culture. This learning was then adopted and expanded for various student characteristics through the implementation of the Merdeka curriculum.

Table 1 Implementation of the Merdeka curriculum in differentiated learning in Elementary Education Units in Kendari City

Curriculum	Class	School Year		
		2022/2023	2023/2024	2024/2025
K13 Curriculum	I			
	II	√		
	III	√	√	
	IV			
	V	√		
	VI	√	√	
Merdeka Curriculum	I	√	√	√
	II		√	√
	III			√
	IV	√	√	√
	V		√	√
	VI			√

Based on the table, the process of implementing differentiated learning in the Merdeka Curriculum program in elementary schools in Kendari City has been implemented as a whole from Phases A, B, and C in the new academic year of 2024. Based on the interviews conducted, in its implementation in elementary schools, teachers first develop Merdeka curriculum knowledge so that they can understand that there is not only one way, method, and strategy used in differentiated learning. If you do not provide services according to students' needs, it can hinder students from being able to progress and develop their learning. Based on this, the mechanism involved in creating, formulating, and implementing differentiated learning is that teachers carry out differentiated learning with strategies of differentiation in content, process, product, and learning environment.

In the process of implementing differentiated learning in Elementary Schools in Kendari City, Teachers provide facilities or infrastructure that will be adjusted to their needs because students have various characteristics. Teachers also look for references and learning media, allowing students to develop themselves and their potential. From the results of the analysis carried out, the differentiated learning flow in Elementary Schools in Kendari City can be seen in Figure 1.

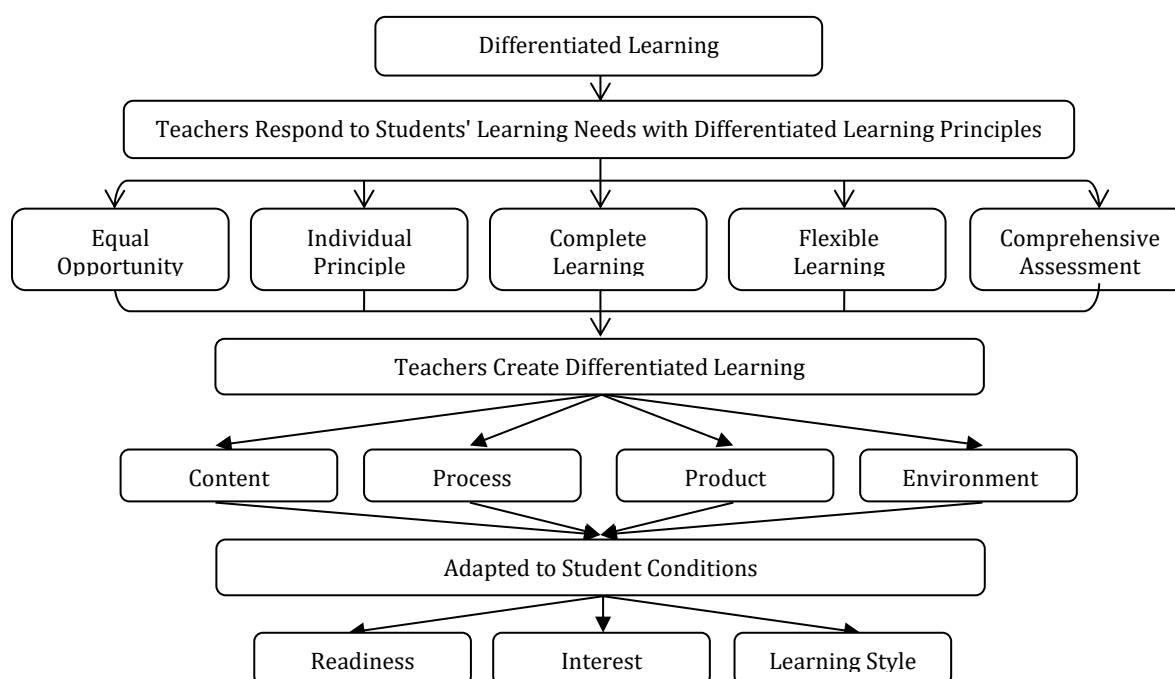


Figure 1. 'Differentiated Learning Flow of Elementary Schools in Kendari City

Based on Figure 1, the differentiated learning flow in elementary schools in Kendari City is an instructional or learning technique in which teachers respond to students' learning needs using the principles of differentiated learning, in which students receive the same opportunities in learning, individual principles, complete learning, flexible student grouping, and comprehensive assessment.

Obstacles Faced by Elementary School Teachers in Kendari City in Implementing Digital-Based Differentiated Learning Management

In general, obstacles in managing differentiated learning include paradigm shifts, principal leadership management, personnel management, digital access/Internet networks, facilities and infrastructure, and teacher accessibility in utilizing technology [23]–[26]. From the results of the analysis of the interviews conducted, it was found that the obstacles faced in the implementation of digital-based differentiated learning management include a shift in the learning paradigm, where changes in the curriculum require schools, both teachers and students, to adapt and adjust existing conditions to the changes that occur. In addition, changes in the curriculum, system, management, and learning management need to be made to adapt to the digital era, but this still needs attention because its implementation still requires adaptation and matching with existing environmental conditions. In addition, there are obstacles to sharp educational disparities between the various regions and

social groups in Indonesia. Currently, learning approaches that focus on differences in students are still lacking. Many teachers prefer a uniform approach even though they are faced with diverse student characteristics.

Furthermore, based on the interview results, it was found that when there is no role from stakeholders as policymakers, the obstacles that can occur in the implementation of digital-based differentiated learning are that it can reduce teacher motivation in improving performance. In addition, the obstacles faced in implementing this differentiated learning method related to school management include the lack of attention from the principal to teacher activities, lack of cooperation between school leaders and teachers, lack of school funds, lack of education personnel and education personnel, poor time management, heavy task complexity, stakeholder gaps, and varied daily staffing.

In the implementation of this digital-based differentiated learning method, there are also obstacles in the aspect of personnel management, which are related to the low use of technology in the learning process, caused by inadequate teacher competence, a less supportive school climate, and available facilities where these three factors are interrelated. In addition, regarding personnel, the obstacles felt are also related to the high workload of teachers, lack of thorough preparation time in planning and implementing differentiated learning, lack of support from both schools and parents of students, traditional teaching habits that are difficult to eliminate, and less effective differentiation in the use of learning methods.

Furthermore, the obstacles that are also experienced in the implementation of digital-based differentiated learning methods are the limited accessibility of teachers in utilizing technology, where based on the data obtained, the presence of information technology is an extraordinary challenge because every teacher is required to immediately adapt to technology and carry out various innovations in the learning process. These obstacles include the lack of digital skills of teachers, the digital divide of students, insufficient time and resources, classroom management that still needs to be optimized, and the security of student data.

Efforts Made by Elementary School Teachers in Kendari City in Implementing Digital-Based Differentiated Learning Management

Based on the results of the analysis carried out from the existing interview data, efforts that can be made include early planning for differentiated learning management in several aspects, including content, process, product, and learning environment. The next is professional development, where teachers can be developed to understand and implement digital-based differentiated learning methods by providing workshops and training, forming learning communities, conducting coaching and mentoring, optimally utilizing the digital platforms that have been provided, and providing resources and stakeholder support. It is hoped that this will ultimately support efforts to maximize and optimize the implementation of digital-based differentiated learning methods to create a more adaptive learning process that can reach all aspects and interests of students.

4. CONCLUSION

The implementation of digital-based differentiated learning in Elementary Education Units in Kendari City is based on the principle that teachers create differentiated learning strategies by considering several categories, namely, content, process, product, and environment, which are adjusted to the needs or conditions of students. These needs can be in the form of students' readiness, interest, and learning styles. The flow of differentiated learning in Elementary Schools in Kendari City is an instructional or learning technique in which teachers respond to students' learning needs with the principles of differentiated learning, namely, students obtain equal opportunities in learning, individual principles, complete learning, flexible student grouping, and comprehensive assessment.

The obstacles faced by teachers and schools in Elementary Education Units in Kendari City in digital-based differentiated learning are that the curriculum changes along with the development and progress of the times, which causes confusion and even reaps pros and cons, so that the education process is hampered. One of them is the change in the learning strategies and methods of teaching devices used by teachers in the learning process. Teachers must adapt to the various digital platforms used in the learning process, such as conference software and learning applications. Teachers must continue learning and developing in the field of technology.

Efforts made by teachers and schools in Elementary Education Units in Kendari City in digital-based Differentiated Learning are that teachers carry out planning at the beginning so that differentiated learning management can run well and carry out professional development. This cannot be separated from the support of resources and stakeholders so that they can allocate the time and resources needed, as well as provide motivation and appreciation to teachers who are the spearheads of the world of education in the current digital era

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