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## Analysis of differentiated learning implementation in elementary schools during the 2020-2024 period

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### Abstract

*Differentiated learning is a learning strategy that emphasizes the importance of the process of adjusting learning strategies that can meet the needs of each student with various ability backgrounds, especially in Elementary Schools. Differentiated learning recognizes that each student has a different learning style, learning speed, and interests. At the elementary school level, where students are actively developing their various abilities and potentials, this approach is very important to implement so that it can ensure that each student can learn optimally and achieve their best potential. This study aims to review various existing literature on the effect of implementing differentiated learning in elementary schools for the 2020-2024 period by analyzing 10 articles that have been published in relevant journals using Harzing's Publish or Perish and Google Scholar applications. Each article was analyzed and the results of the analysis were arranged in a table that included the title, author's name, year of publication, and research findings. The results of the analysis showed that differentiated learning was able to increase participation motivation and student learning outcomes with*

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*quite significant results compared to learning with conventional methods. This can be seen from several studies that show an increase in cognitive abilities and student learning outcomes. This study recommends ongoing training for teachers related to the implementation of differentiated learning with effective and efficient time management, as well as collaboration between all parties such as parents and learning communities, as well as the use of technology as an integral part of efforts to create a more inclusive and student-centered learning environment, especially in elementary schools.*

## INTRODUCTION

### Background of the Study

Learning in elementary school is a fundamental stage in a student's long journey to acquire the knowledge and skills needed in life. At this stage, students not only learn about academic material, but also begin to form socially, emotionally, and cognitively (Yestiani & Zahwa, [2020](#)) . Therefore, education in elementary school has a very important role in forming the foundation of students' knowledge and skills.

At the elementary education level, students start with basic skills that are prerequisites for further learning. Reading, writing, and arithmetic skills are the foundation of literacy and numeracy skills, which are essential in every subject at the next level of education (Windi Anisa et al., [2020](#)) . Without mastering these basic skills, students will have difficulty understanding more complex concepts later on. Therefore, learning in elementary schools must be designed in such a way that each student can master these basic skills (Laksmi et al., [2024](#)) .

Students at the elementary school level have unique characteristics. These characteristics include potential, interests, learning styles, and specific needs. Diversity reflects the richness of potential that needs special attention and treatment from teachers and the environment. So that a learning innovation is needed that can accommodate individual needs so that each student can develop optimally according to their nature.

One of the educational innovations that is currently being implemented in learning activities in the independent curriculum that is considered relevant in the context of this diversity is differentiated learning. Differentiated learning is a concept that aims to ensure that learning activities can meet individual learning needs so that students can learn optimally according to their respective potentials and learning styles (Mulyawati et al., [2022](#)) . In differentiated learning, learning activities will be centered on students, where the teacher acts as a facilitator who actively facilitates by implementing learning strategies based on student needs.

Differentiated learning has a very important role in improving the quality of education in elementary schools because it can answer the diverse learning needs of students. Each student is unique in terms of learning style, abilities, and interests, which often cause difficulties if handled uniformly. By implementing differentiated learning, teachers can adjust materials, methods, and assessments according to individual needs, so that each student can learn optimally. This approach not only improves students' understanding of the subject matter but also encourages higher self-confidence and motivation to learn, because they feel cared for and appreciated in the learning process (Sakti & Ainiyah, [2024](#)).

Differentiated learning is becoming an increasingly relevant approach in the modern education system because it can meet the diverse learning needs of students. In elementary school, the learning period is a critical phase in students' cognitive, emotional, and social development. This period is an important foundation for the formation of critical thinking skills, collaboration, and creativity. Therefore, understanding where differentiated learning has been implemented at this level of education is very important. So that the process of analyzing the implementation of differentiated learning can help identify the best practices that have been carried out by teachers, both in terms of teaching methods, strategy assessments, and curriculum adaptation. The results of the analysis can be a reference for other teachers in optimizing similar approaches in their classes. In addition, this analysis also aims to identify the problems faced by teachers.

### **The Problem of The Study**

Problems in analyzing the implementation of differentiated learning in elementary schools in the 2020–2024 period are very complex and diverse, covering aspects of conceptual understanding, teacher competence, resource availability, and structural challenges. One of the main challenges is the lack of teacher understanding of the concept and principles of differentiated learning itself. Many teachers do not fully understand that differentiated learning aims to accommodate the diverse learning needs of students through adjustments to the process, product, and content of learning. This touch often occurs due to the lack of relevant training or the absence of applicable technical guidelines in the field.

In addition, the implementation of differentiated learning requires high teacher competence, including the ability to analyze student needs, design appropriate strategies, and use assessment tools to understand student learning profiles. However, not all teachers have these skills. Limitations in planning and

implementing appropriate learning for students with different abilities, learning styles, or interests are serious obstacles that can hinder the effectiveness of its implementation.

In terms of resources, limited facilities are also a significant challenge, especially in schools with inadequate infrastructure support. Schools in remote or rural areas often face obstacles in the form of minimal teaching aids, open materials, and access to technology that can support differentiated learning. As a result, teachers in these areas find it difficult to implement flexible and innovative strategies.

The COVID-19 pandemic that took place in the early period further complicated the situation. During the brave learning, many teachers had difficulty in recognizing the needs of individual students due to the limitations of direct interaction. In addition, the gap in technology access between students also widened the gap between ideal learning needs and real conditions in the field.

Not only that, the education system that is often oriented towards certain targets and standards makes differentiated learning difficult to implement. Teachers often feel burdened to complete the curriculum within a specified time, making flexible approaches such as differentiated learning difficult to absorb. In addition, internal policies in some schools do not fully support the implementation of this approach. For example, not all principals give teachers the freedom to adjust learning methods to the needs of individual students.

### **Research State of the Art**

Previous literature studies examining the implementation of differentiated learning in different countries or educational contexts have shown mixed findings regarding the effectiveness and challenges of its implementation. In the United States, for example, research shows that differentiated learning has been widely implemented in many schools, especially after education that emphasizes individual student needs. As a result, this approach has been shown to increase student motivation and engagement, especially in heterogeneous classes. Several studies have also highlighted the importance of teacher training to implement differentiated learning effectively because, without a good understanding of this concept, implementation in the field is often not optimal.

In Europe, especially in countries such as the UK and Finland, differentiated learning is implemented by integrating various strategies to support diversity in the classroom, including the use of technology and curriculum adjustments. In Finland,

where inclusive education is highly emphasized, this approach is implemented very well to provide equal access to education for all students, both those with special needs and those who are high achievers.

Despite the problems faced, several recent studies that are relevant and focus on differentiated learning in the 2020-2024 period provide important insights into its application and impact in the context of education in Indonesia. Such as research (Meylovia & Alfin Julianto, [2023](#)) it can be seen that the use of a differentiated approach to science content can foster student activity in obtaining good learning outcomes even though there are obstacles experienced by teachers.

Other research results (Sitorus et al., [2022](#)) show that the implementation of differentiated learning can meet the needs of students. Statement (Faigawati) shows that implementation can develop the quality of teachers and students in classroom learning activities.

On the other hand, research from (Naibaho, [2023](#)) It is known that through the implementation of differentiated learning, students will show better performance if the assignments given by the teacher follow the skills and understanding they have.

Research (Mulyawati et al., [2022](#)) confirms that learning differentiation can guide learners To increase the existing potential in self. These studies show that differentiated learning can indeed be implemented effectively in elementary schools.

#### [Novelty, Research Gap, & Objective](#)

The results of several studies and research on differentiated learning, state that differentiated learning is included in educational innovations that are currently being implemented in learning activities in the independent curriculum which are considered relevant in the context of student diversity. Differentiated learning is a concept that aims to ensure that learning activities can meet individual learning needs so that students can learn optimally according to their respective potentials and learning styles (Faigawati et al., [2023](#)) . In differentiated learning, learning activities will be centered on students, where the teacher acts as a facilitator who actively facilitates by implementing learning strategies based on student needs.

Contextually, differentiated learning refers to the principle that not all students can learn with the same method. Some students easily understand the material through verbal explanations, while other students learn more effectively with visual methods or even with direct practice. Therefore, through this

differentiated learning, teachers can vary the content, process, and learning products flexibly (Marzoan, [2023](#)).

However, in theory, this differentiated learning has the potential to improve the quality of learning. However, in its implementation, of course, it will face various challenges in the field. For example, a classic problem that is often found in elementary schools is class management with a large number of heterogeneous students (Naibaho, [2023](#)). So in these conditions, teachers must prepare a learning plan that can meet the needs of students individually according to the number of students in their class. In addition, other challenges in the form of limited learning support, time, and teaching materials also become challenges in the implementation of differentiated learning.

The implementation of differentiated learning also certainly requires support from various parties, especially in terms of changing the learning paradigm, teachers, and learning environment (Pada et al., [2023](#)). Teachers are required to have adequate competence and skills to identify the needs of students and plan adaptive learning. Of course, this must get support from the school.

Although various studies on differentiated learning have provided valuable insights, there are still some gaps or inconsistencies that need to be addressed, especially in the Indonesian context. One major gap is **the lack of focus on practical implementation in elementary schools**. Most studies tend to emphasize the theory or general approach of differentiated learning, without delving deeply into how this strategy is applied in real-world contexts. More in-depth research on how teachers in Indonesian elementary schools adapt and implement differentiated learning in a crowded curriculum and limited resources is needed.

## METHOD

### Type and Design

This paper uses a literature review method or literature study as the main approach to collecting and analyzing data. A literature study is one of the research methods that uses various written sources as references to obtain various information related to the implementation of differentiated learning in elementary schools (Andajani, [2022](#)). The author uses the literature study method to explore the concepts, practices, challenges, and difficulties faced when implementing differentiated learning in elementary schools. This method is considered relevant because the author can obtain comprehensive data from various perspectives and

sources, such as scientific journals, books, research reports, news in various media, and the internet. Literature study is one of the methods that is reflective and analytical, because the author conducts various analyses of existing documents and information, not through experiments and direct observations in the field. This method is carried out systematically through various stages, namely literature search, literature selection, literature analysis, and interpretation of findings.

### **Data and Data Sources**

The data from this literature review were obtained from various relevant and credible literature sources, such as scientific journals, research articles, reference books, and various educational journals that have been published within a period of four years or the period from 2020 to 2024. Meanwhile, the primary data sources taken from this literature review are the results of previous research that examine how to implement differentiated learning in elementary schools, both domestic and foreign journals. Meanwhile, secondary data sources consist of several supporting literature, for example, education policies issued by educational institutions and institutions, differentiated learning guidebooks, and data from related agencies such as the Ministry of Education and Culture.

### **Data Collection Technique**

The data collection technique in writing this paper uses a literature review method, where various data are collected and collected from relevant and reliable written sources. Data collection is carried out by involving a systematic search process for scientific journals, research articles, reference books, and institutional reports related to the implementation of differentiated learning in elementary schools in the 2020-2024 period. The author uses the search keyword differentiated learning. To find various relevant literature, the author uses academic databases, digital libraries, and scientific publication portals. From the sources obtained, they are then selected and evaluated based on their suitability to the focus of the writing, so that the data collected can describe the conditions of the implementation of differentiated learning, especially in elementary schools as a whole.

### **Data Analysis**

The data collected from various literature sources are packaged and analyzed in depth to identify important things related to the implementation of differentiated learning in elementary schools in the 2020-2024 period. The research began by searching for articles related to the research topic to be carried out. One of the criteria for scientific articles used as data is scientific articles sourced from

international and national journals. The period used is the last 4 years, namely from 2020-2024. In the initial stage of searching for journal articles, the author obtained 100 articles through the search keyword "differentiated learning". The next stage is to validate scientific articles by grouping scientific articles based on the title of the article that matches the idea of the topic being raised. Then the next step is to review the quality of the available scientific articles and whether they are relevant to the research topic. Based on the results of the analysis of the available literature, from one hundred articles that were then selected, 10 articles found several main findings related to the implementation of differentiated learning in elementary schools.

## RESULTS

The results of the study of several literatures related to the implementation of differentiated learning in elementary schools show an increase in both the process and learning outcomes. However, of course, there are challenges and difficulties faced by teachers and students when implementing differentiated learning in the classroom. The following are the main findings from the results of the literature study presented in Table 1.

**Table 1.** Data from Reviewed Articles Relevant to the Implementation of Differentiated Learning in Elementary Schools

NO	Title	Writer	Results
1.	The Influence of Differentiated Learning Strategies on Student Learning Outcomes.	Sitorus, Parlindungan Simanullang, Eka Notasya Manalu, Andriono Laia, Beautiful Septa Ayu Tumanggor, Riossally Marselina Nainggolan, Juliper	Differentiated learning can improve student learning outcomes. Especially students with kinesthetic learning styles who get higher average scores than visual and auditory styles (Sitorus et al., <a href="#">2022</a> )
2.	Differentiated Learning: Understanding and Implementing Interactive Strategies to Meet the Needs of All Students	Hatixhe Ismajli and Ilirjana Imami Morina	The results of the study of this article show that the understanding of differentiated learning in elementary schools



- in the Kosovo region is still low, this is evidenced by the continuity between public and private schools. Teachers tend to focus more on the results or final products of students, while the process and content aspects have not been implemented consistently (Ismajli & Imami-Morina, [2018](#))
3. Differentiation in Education: Configurative Review in Ingunn Eikeland and A Stein Erik Ohna Differentiated strategies are often considered as learning concepts that only focus on adapting content, processes, or products to meet the diverse needs of learners (Eikeland & Ohna, [2022](#)).
4. Differentiated Learning to Enhance Student Potential in Elementary Schools. Yuli Mulyawati, MS Zulela, and Edwita The results of the study show that differentiated learning has proven to be effective in developing students' potential because it provides opportunities to learn according to their respective abilities and

- learning styles  
(Mulyawati et al.,  
[2022](#))
5. Differentiation of Theoula Erotocritou Teaching and Learning: Teacher Perspectives. Stavrou and Mary Koutselini. The results of the study showed that the application of differentiated learning can provide positive results, as evidenced by the increasing reading ability, self-efficacy, and attitudes of students toward learning (Stavrou & Koutselini, [2016](#)).
6. The Influence of The Differentiated Learning Implementation on Fulfilling the Learning Needs of Elementary School Students. The Greatest Showman. The results of the study showed that there was a significant positive impact on the implementation of differentiated learning applied in elementary schools in the form of instilling students' learning needs (Pebriyanti, [2023](#)).
7. Literature Study: The Importance of Differentiated Learning in the Era of Independent Curriculum to Improve Student Learning Outcomes. The Human, Alamia Haque Munandar, Kuku This article shows that there is great potential that is seen especially in improving learning outcomes and motivation of elementary school students through

differentiated learning in the Independent Curriculum.

Differentiated learning emphasizes the suitability between learning methods and materials that are adjusted to the characteristics and needs of students, this is evidenced by the increasing active participation of students in learning and student achievement (Insani & Munandar, [2023](#))

8. The Influence of Dalila, Azmy Almas  
Differentiated Learning in Grace, Siti  
Problem-Based Learning Liliawati, Winny  
on High School Students' Kaniawati, Ida  
Cognitive Learning  
Outcomes

This article identifies several strategies that support the implementation of differentiated learning, which include understanding the individual characteristics of students, using diagnostic and formative assessments, and utilizing various methods, media, and learning resources (Dalila et al., [2022](#))

- (Andajani, [2022](#)).
9. Implementation of Yuni Yati, Minsih, Endang Fauziati, and Yulia Maftuh Hidayati  
Differentiated Learning Based on Learning Models in Elementary Schools. The results of this study indicate that differentiated learning is effective in increasing student involvement in learning activities, thereby increasing student understanding. This is achieved through a personal approach, following the principles of inclusive education (Yuni Yati et al., [2023](#)).
10. Implementation of Aditya Rini Kusumaningpuri  
Differentiated Learning in Phase B Science Learning for Grade IV Elementary Schools. The results of this study concluded that differentiated learning applied to the material of plant body parts in grade IV has proven effective in helping students to be actively involved in learning activities. However, in the planning and implementation, various shortcomings were found so improvements are needed so that differentiated learning
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can be optimal in all classes and all subjects (Kusumaningpuri, [2024](#)).

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## DISCUSSION

The following is a discussion that has been found after conducting a literature review related to the implementation of differentiated learning in elementary schools. Differentiated learning is not a new learning strategy, because this strategy has long been implemented in the United States (Naibaho, [2023](#)). Differentiated learning believes that each student has a different learning style, needs, and potential. So teachers are required to improve their competence and knowledge about various approaches, models, and learning strategies that can accommodate the needs of students who have different backgrounds and potentials so that they can learn optimally.

The main focus in differentiated learning lies in the teacher's perspective in seeing the strengths and needs of students (Mulyawati et al., [2022](#)) so that differentiated learning can be a solution to solving problems related to the diversity of student abilities. Several types of differentiated learning can be applied according to student needs, namely content differentiation, process differentiation, and product differentiation.

Differentiation of content is related to how the readiness to learn, interests, and learning profiles of diverse students. Determining indicators of learning readiness can be done by mapping at the beginning of learning activities. This is where teachers have an important role in exploring the potential and interests of students, to support the achievement of meaningful learning objectives. Teachers will record learning needs based on learning profile indicators so that students are allowed to determine the desired method in learning activities.

In the differentiation process, teachers are very important in analyzing learning activities carried out by students either individually or in groups. The stages of the differentiation process include: 1) Graded activities, meaning that teachers ensure that students can build the same understanding of the material being studied, even in different ways; 2) Making provocative questions to students to explore the material being studied. 3). Preparing individual student agendas, such as making notes of task lists such as student work according to their needs; 4)

facilitating the duration of time for students to complete assignments, at this stage the teacher must pay attention to students who need to be given additional time to do assignments according to their abilities; 5) developing visual, kinesthetic and auditory learning styles; 6) classifying groups according to the abilities and interests of students.

Product differentiation is the final result of students' understanding of the learning material that will be assessed by the teacher according to their abilities and will provide an overview for subsequent learning. The products produced by students will vary greatly because they determine it, some products made by students are in the form of observation reports, presentations, pictures, mind maps, videos, songs, and so on. Product creation aims to measure students' broad understanding of the material that has been studied both individually and in groups.

Based on the results of the literature review analysis, it is proven that the application of differentiated learning has a positive impact and effectiveness in learning in elementary schools but reflects various complex challenges.

## **1. Effectiveness of Differentiated Learning Implementation in Elementary Schools**

### **a. Improvement Motivation Study Learners**

Differentiated learning allows students to learn in the way that suits them best, whether through visual, kinesthetic, or auditory activities (Agung et al., [2024](#)). When students feel more comfortable and can understand the material in their way, their learning motivation will also increase.

### **b. Strengthening Understanding Draft**

One of indicator its effectiveness A learning is to what extent participants have an Understanding and mastery of a concept taught. With differentiated learning strategies, teachers are given the convenience of adjusting the material to the level of student ability, both those below average, according to standards, and students with high abilities (WIDAYATI, [2023](#)).

### **c. Push Independence and Creativity**

Differentiated learning is very supportive in developing students' independence and creativity (Eikeland & Ohna, [2022](#)). With various choices in activities or final products, of course, it makes it easier for students to make decisions regarding the fastest and best way for them to complete tasks. This process trains critical and creative thinking skills because they are required to think

quickly to find solutions that suit their abilities and potential.

## **2. Challenge**

Some of the challenges faced by teachers in implementing differentiated learning include:

### **a. Limited time and resources**

Teachers are often constrained by time constraints when planning and implementing differentiated learning, this happens because it requires more preparation and time. In addition, limited resources such as learning resources such as learning media and role-playing tools can also be an obstacle (Lisnawati & Nirmala, [2024](#)).

### **b. Amount participants are educated a lot.**

In classes with a large number of students, teachers are likely to have difficulty in dividing individual attention and treatment to each student. This can make learning differentiation less than optimal (Lisnawati & Nirmala, [2024](#)).

### **c. Obstacle evaluation and assessment**

In the implementation of differentiated learning, assessment cannot be generalized. Teachers certainly need to create different assessment instruments according to the needs and abilities of each student, which of course will require more time and effort (Lisnawati & Nirmala, [2024](#)).

## **3. How to Overcome Challenge**

### **a. Teacher training and mentoring**

The existence of technical guidance and training on differentiation learning strategies must be provided periodically and routinely so that teacher competence is further improved. In addition, the mentoring process by the principal or supervisor will further assist teachers in implementing differentiation more effectively (Eikeland & Ohna, [2022](#)).

### **b. Utilization Technology**

Technology can be used as an effective tool in differentiated learning. Especially now in the era of globalization, of course, everything is related to advances in science and technology. With learning applications, teachers can provide different materials according to the needs of students and combine their development in real terms (Eikeland & Ohna, [2022](#)).

### **c. Collaboration between parents and the community**

Good collaboration and communication with parents and the learning community play a very important role in supporting the implementation of

differentiated learning. Parents can help identify children's needs at home, while the community can provide additional resources to support the learning process (Eikeland & Ohna, 2022).

#### d. Distribution efficient time

Teachers need to manage time effectively so that all students get enough portion and attention. Small group learning or project-based methods can be a solution in optimizing time and facilitating effective differentiated strategies (Eikeland & Ohna, 2022).

Despite the complex challenges, differentiated learning still has great potential to improve the quality of education and encourage optimal student development.

## CONCLUSION

Differentiated learning has significant relevance in creating inclusive education in elementary schools by accommodating the diversity of students' abilities, needs, and interests. This implementation approach is in line with national education policies, such as the Merdeka Curriculum, which emphasizes student-based learning through the initiation and adjustment of the learning process. This study aims to analyze the application of differentiated learning, identify challenges faced by teachers, and provide recommendations to support its optimal implementation according to the current educational context and needs.

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