

LITERATURE REVIEW: Implementation of Differentiated Learning Strategies in Supporting Student Learning Outcomes

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ABSTRACT

This study aims to analyze the implementation of differentiated learning strategies in supporting student learning outcomes. Differentiated learning adjusts teaching methods and materials based on individual learning needs and styles, which is important in the context of 21st century education. Through a literature study covering national and international articles in the last ten years, this study found that the implementation of this strategy can improve student learning activities and outcomes at various levels of education, including junior high and senior high schools. The results showed that students involved in differentiated learning showed significant improvements in critical thinking and problem-solving skills. Thus, differentiated learning has proven effective in meeting students' diverse learning needs and making a positive contribution to their academic outcomes. This study recommends that teachers continue to implement and develop differentiated learning strategies to achieve optimal learning outcomes.

Keyword : Differentiated learning ; Learning Outcomes

INTRODUCTION

Education is a systematic process that involves the transfer of knowledge, skills, values, and norms to individuals through teaching, training, or experience. The main purpose of education is to develop human potential, prepare individuals for life and work, and form responsible citizens who contribute positively to society (Arif Rohman Hakim, 2022). According to Faiz, A (2022) Bobby De Potter (2021) in Rijal and Bachtiar stated that each student has a different tendency in how he absorbs information in learning. Learning preferences or learning styles of students are one of the things that teachers need to pay attention to in implementing the learning process so that students can understand the material more easily according to their learning style. Each student has individual diversity so that they have different learning needs. Analyzing learning styles is one way for teachers to implement differentiated learning.

Learning style according to Ningrat et al. (2018) is a way of absorbing and understanding information that is used as an indicator for acting and related to the

learning environment. The principle of differentiated learning strategies applied in chemistry learning is the teacher's understanding of the differences in each student's learning style in understanding material that is considered difficult for students so that teachers can vary and develop differentiated learning strategies in chemistry learning in order to help students improve their understanding of concepts in chemistry subjects. Teachers need to accommodate students' learning needs so that learning can run effectively. Differentiated learning can be a solution to meet the needs of students' diverse learning styles (Widyawati, 2023). Each student has unique learning preferences and this reflects their tendencies in receiving, processing, and remembering information. (Maulidia, 2023)

Differentiated Learning is a learning strategy that adapts to the needs of students (Herwina, 2021). Teachers facilitate students according to their needs, because each student has different characteristics, students cannot be treated the same. In implementing a differentiated learning strategy, teachers must think about acceptable steps that will be applied later, because a differentiated learning strategy does not mean learning through different treatments or activities for each student and learning that separates intelligent and less intelligent students (Uno & Umar, 2023). Differentiated learning shows that educators are better able to identify, investigate, and serve the different learning needs of diverse students. So that in the process this differentiated learning strategy can be said to be suitable for application in learning because in the process this differentiated learning strategy can be adjusted according to the learning style and characteristics of students so that it can support student learning outcomes from the intelligent to the less intelligent. By adjusting the learning needs of each student and considering their readiness, interests, and learning profiles, a differentiated learning strategy can be utilized. The results of the diagnostic assessment carried out at the beginning of the learning process are used to determine the initial level of students' abilities and serve as a guideline for mapping students in relation to their learning readiness, used to implement differentiated learning (Pebriyanti, 2023).

METHODS

Literature study is a method used to describe the Implementation of Differentiated Learning Strategies in Supporting Student Learning Outcomes. In supporting the idea of this research, of course, previous research is needed to strengthen the argument for this research (Faiz, 2023). The sources taken in this study are several articles from previous research in recent years with relevant research from national and international journals that discuss the Implementation of Differentiated Learning Strategies in Supporting Student Learning Outcomes. The steps of the literature study research refer to the work of Nasution, Yaswinda & Maulana (2019) (Pitaloka et al., 2022; Purwati et al., 2022) as follows:

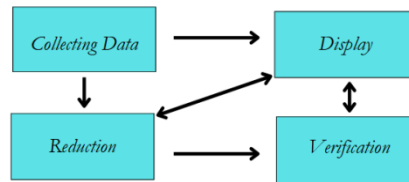
Figure 1: Steps of Literature Study Research
(Pitaloka et al., 2022; Purwati et al., 2022)



To describe the data from the research results that have been conducted and the discussion which is then concluded, the researcher refers to Sugiyono's book (2015) regarding how to collect data, reduce data, present data to draw

conclusions. (Faiz, 2023). The analysis flow can be visualized in the form of the image below:

Figure 2: Data Analysis Flow
(Sugiyono, 2013; Faiz & Soleh; Faiz, Novhalia, et al., 2022)



RESULT AND DISCUSSION

In the discussion of this research, the population and samples used in this study were 11 articles from journals indexed by Sinta with relevant research.

Table 1: Journal data taken for literature review

No	Journal Name	Number of Articles	Index Ranking
1	GENTA MULIA: Scientific Journal of Education	1	Sinta 5
2	Creative of Learning Students Elementary Education	1	Sinta 5
3	Indonesian Journal of Education and Learning (JPPI)	1	Sinta 4
4	JiIP (Scientific Journal of Educational Sciences)	1	Sinta 5
5	Jurnal Sains dan Edukasi Sains	1	Sinta 4
6	JagoMIPA: Journal of Mathematics and Science Education	1	Sinta 4
7	RAFA Mathematics Education Journal	1	Sinta 3
8	Indonesian Science Education Journal	1	Sinta 3
9	Journal on Education	1	Sinta 3
10	Journal of History Education and Social Humanities Research	1	Sinta 4
11	International Journal of Elementary Education	1	Sinta 2

Table 2: Results of the analysis of the journals that have been taken

No	Author Name	Research title	Research result
1	Nanda Safarati; Fatma Zuhra	Literature Review: Differentiated Learning in Secondary Schools	Differentiated learning has been applied at secondary school level, namely junior high

			school level and senior high school level, differentiated learning can improve student learning outcomes.
2	Lucky Taufik Sutrisno, Asep Hery Hernawan	The application of differentiated learning as a solution to the problem of the lack of student activity during the learning process.	The use of differentiated learning based on learning styles can increase student activity based on five indicators, namely: focus, cooperation (teamwork), expressing opinions or ideas, problem solving, and discipline.
3	Suwartiningsih	Implementation of Differentiated Learning to Improve Student Learning Outcomes in Science Subjects on the Topic of Land and Sustainability of Life in Class IXb, Even Semester, SMPN 4 Monta, 2020/2021 Academic Year	Based on the results of the research and discussion, it can be concluded that the application of differentiated learning can improve the learning outcomes of science on soil and sustainability of life material for grade IXb students in the even semester at SMPN 4 Monta in the 2020/2021 Academic Year.
4	Elis Yunita, Firdha Rachmawati, Tatu Hilaliyah	Meta Analysis of Differentiated Learning Implementation to Improve Student Learning Outcomes	The application of differentiated learning is able to provide a significant increase in learning outcomes at various levels of education..
5	Elsa Septyana, Nika Dewi Indriati, Intan Indiatil, Lilik Ariyanto	Implementation of Differentiated Learning to Improve Learning Outcomes of Class X Culinary Students of SMK in Semarang on Linear Program	The application of differentiated learning has helped improve the learning outcomes of students in class X Culinary 1 at SMK Negeri 6 Semarang, especially in the

		Material	Mathematics subject with the topic of Linear Programs.
6	Syarifuddin, Nurmi	Differentiated Learning in Improving Mathematics Learning Outcomes of Grade IX Students, Even Semester, SMP Negeri 1 Wera, 2021/2022 Academic Year	The application of differentiated learning to mathematics subjects can improve student learning outcomes through classifying student abilities, using varied material development according to student abilities, and taking an individual approach.
7	Muslimin, Bonita Hirza, Rieno Septra Nery ,Refi Elfira Yuliani , Heru, Agus Supriadi, Tria Desvitasari, Neneng Khairani	Differentiating in Realizing Independent Learning	The application of differentiated learning through the Problem Based Learning model in Mathematics learning in class VIII of SMP Negeri X can improve student learning outcomes and student learning activities.
8	Sri Novita Laumarang, Abdul Haris Odja, Supartin	The Influence of Differentiated Learning Implementation Using the Discovery Learning Model on Student Learning Outcomes on the Global Warming Concept	The use of differentiated learning has also been carried out by Suwartiningsih (2021), the results show that the application of differentiated learning can improve student learning outcomes.
9	Sri Setik Nurhamami	Improving Student Learning Outcomes on the Adaptation of Living Things Material for Grade VI Through the Application of Differentiated Learning Strategies	There is an increase in learning outcomes for the material on Adaptation of Living Things through the application of Differentiated Learning Strategies in grade 6 students of SDN Wonokusumo VI/45 Surabaya
10	Ami Aviatin, Agnes Avivi, Dhea	Implementation of Differentiated Learning with	Differentiated learning with the PjBL learning model Differentiated

	Pramadhitta, Fifi Fatmawati Rahayu, Marlina Saptariana, Anisa Umu Salamah	Project Based Learning Model for Senior High School Students in Grade X on Biotechnology Material	learning with the PjBL learning model runs according to plan and produces a pleasant learning atmosphere and students are free to express their potential according to their interests so that learning feels more meaningful.
11	Kadek Yudista Witraguna, Gusti Ayu Dewi Setiawati, Ni Nyoman Tri Wahyuni, I Ketut Manik Asta Jaya, Ni Kadek Ari Anggreni Mediani	Learning in the Merdeka Curriculum: Elementary School Teachers' Understanding of Differentiated Learning	Differentiated learning is a learning process that prioritizes the diversity of students' abilities in understanding learning materials, where students' abilities are seen based on their readiness to learn, interests, and learning styles, so that students' learning needs become a priority. Students' learning needs can be seen from four components, namely differentiated processes, products, content, and learning environments. So that when these components are applied, they can support the improvement of student learning outcomes.

From the results of the analysis that has been done, in the first journal differentiated learning has been applied at the secondary school level, namely junior high school and high school levels, from the results obtained differentiated learning can improve student learning outcomes. In the second journal Utilization of differentiated learning based on learning styles can increase student activity based on five indicators, namely: focus, cooperation (teamwork), expressing opinions or ideas, problem solving, and research discipline that has been carried out through three stages including, Searching for student learning style data; Grouping students; and Providing materials according to learning styles (content

differentiation). In the third journal, the research was conducted at the junior high school level in the science subject with the title Implementation of Differentiated Learning to Improve Student Learning Outcomes in Science Subjects on the Topic of Soil and Sustainability of Life in Class IXb Even Semester of SMPN 4 Monta in the 2020/2021 Academic Year with research results Based on the results of the research and discussion, it can be concluded that the application of differentiated learning can improve science learning outcomes on the subject of soil and sustainability of life in class IXb students. In the fourth journal, the results explain that the application of differentiated learning is able to provide a significant increase in learning outcomes at various levels of education. In the fifth journal, the application of differentiated learning can be applied at the vocational high school level with the results of the application of differentiated learning having helped improve the learning outcomes of students in class X Boga 1 at SMK Negeri 6 Semarang, especially in the Mathematics subject with the topic of Linear Programs.

The results of the study further explain that differentiated learning strategies can have a significant impact on students. The application of differentiated learning to mathematics subjects can improve student learning outcomes through classifying student abilities, using varied material development according to student abilities, and taking an individual approach. Journal seven explains the results that the application of differentiated learning through the Problem Based Learning model in Mathematics learning in class VIII of SMP Negeri X can improve student learning outcomes and student learning activities. Journal eight discusses the results that the use of differentiated learning has also been carried out by Suwartiningsih (2021), the results show that the application of differentiated learning can improve student learning outcomes. Journal Nine explains that differentiated learning can be implemented in elementary schools with the results. There is an increase in learning outcomes for the Adaptation of Living Things Material through the application of Differentiated Learning Strategies in class 6 students of SD Negeri Wonokusumo VI/45 Surabaya. The latest journal explains that Differentiated learning with the PjBL learning model Differentiated learning with the PjBL learning model runs according to plan and produces a pleasant learning atmosphere and students are free to express their potential according to their interests so that learning feels more meaningful.

From the discussion of the journal results that have been analyzed, it is clear that differentiated learning strategies can improve student learning outcomes, because the differentiated learning process adapts to students' learning styles, differentiated learning can also train students' critical thinking skills in learning so that differentiated learning strategies can support student learning at school.

CONCLUSION

The application of Differentiated Learning strategies has been proven effective in improving student learning outcomes, both at elementary, junior high and high school levels. By adjusting teaching methods and materials according to individual learning styles, students are better able to understand difficult concepts. The application of differentiated learning strategies can Increase Student Activity and Involvement, through Learning that is tailored to students' learning needs and preferences can increase their activeness and involvement in the learning process.

This can be seen from the increase in indicators such as focus, cooperation, and problem solving.

The development of Critical Thinking Skills in the application of differentiated learning strategies not only improves learning outcomes, but also helps students develop critical thinking skills. By involving students in real-world situations and problem solving, they learn to evaluate information and make better decisions.

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