



A Literature Review of the Implementation of Differentiated Learning in Indonesian Education Units

**Devi Meika Sari, Firdaus Maulida, Jelita Puspita Ningrum Khoirunnisa,
Siti Khoiriyatul Ummah, and Setyo Admoko**

Physics, PPG Prajabatan Gelombang 2
Universitas Negeri Surabaya, Surabaya, Indonesia
meikadevi@gmail.com

Abstract

The Merdeka Curriculum is currently implemented in Indonesia using a new paradigm of learning and assessment, namely learning that meets the learning needs of students. For this reason, differentiated learning is very suitable for the Education unit. The research examines the implementation of differentiated learning in the Indonesian Education Unit. This research is a literature review that involves reviewing related articles that aim to find scientific and theoretical studies. The author reviews 16 journals, consisting of 12 national journals and four international journals, with various methods to find out research results related to differentiated learning. The results showed that the advantages of implementing differentiated learning are that it can improve student learning outcomes, student learning motivation, understanding, and quality of student learning, it can accommodate students' learning needs by paying attention to their interests, profiles, learning styles, and learning readiness; and the independent curriculum can create active and creative learning and increase students' learning motivation.

Keywords: Differentiated Learning; Education; Learner Learning Needs

Received : 13 April 2023

Accepted : 1 July 2023

Published: 12 July 2023

DOI : <https://doi.org/10.20527/jipf.v7i2.8429>

© 2023 Jurnal Ilmiah Pendidikan Fisika

How to cite: Sari, D. M., Maulida, F., Khoirunnisa, J. P. N., Ummah, S. K., & Admoko, S. (2023). Literature review implementation of differentiated learning in Indonesian Education Units. *Jurnal Ilmiah Pendidikan Fisika*, 7(2), 250-264.

INTRODUCTION

Ki Hadjar Dewantara is one of the national education figures whose thoughts are used in the education curriculum in Indonesia. One of the most famous mottos in the world of education is the Education Trilogy, which reads *ing ngarsa sung tuladha*, *ing madya mangun karsa*, and *tut wuri handayani*. *Ing ngarsa sung tuladha* means an educator puts himself in front as an example for learners. *Ing madya*

mangun karsa means that an educator puts himself in the middle as a spirit builder to foster students' interests and ideas in their work. *Tut wuri handayani* means that an educator puts himself behind as a giver of encouragement, direction, and motivation for students (Febriyanti, 2021). Darmawan & Sujoko (2019) also explained that Ki Hadjar Dewantara used Javanese in the philosophy of *ing ngarsa sung tuladha*, *ing madya mangun karsa*, and *tut wuri*



handayani, which means that educators must be examples and role models, educators as spirit builders, and educators as encouragers of students to develop themselves. Beside this philosophy, Ki Hadjar Dewantara also proposed the *among* system, which means that educators are *pamong* those who take care of students with full dedication (Towaf, 2016). According to Ferary (2021), the *among* system proposed by Ki Hadjar Dewantara means that educators act as parents who guide students in understanding information and its environment. So, educators should educate, not just teach the material.

According to Biesta (2015), education is about knowledge and skills and guides students in behavior and ways of being. Teaching means the process of providing knowledge to fulfill life skills, while education means the process of guiding all the natural forces possessed by children in order to be able to achieve the highest level of safety and happiness (Masitoh & Cahyani, 2020). So that in the process of guiding, educators as tutor-servants give children the freedom to find their independence, both outwardly and mentally. From the philosophy of Ki Hadjar Dewantara, it is known that the intended education guides the growth and development of the child's natural strengths. This is in accordance with the Merdeka Curriculum, which uses the principles of learning a new paradigm in education.

The Merdeka Curriculum is designed to provide flexibility for educational units to compile a contextual operational curriculum for educational units so that the learning carried out can adjust to the learning needs of students. The Ministry of Education, Culture, Research, and Technology released the Merdeka Curriculum in February 2022. The Merdeka Curriculum is designed to focus on the essential material and character development of the Pancasila

Student Profile to improve the quality of learning in Indonesia. The Pancasila Student Profile is an essential competence and character trait set that includes faith, fear of God, noble character, global diversity, mutual cooperation, independence, critical reasoning, and creativity (Sufyadi *et al.*, 2021).

The Merdeka curriculum uses a new paradigm of learning and assessment. The new learning paradigm refers to learning principles, which include: (1) Learning is designed by considering the stages of development of achievement levels, learning needs, characteristics, and development of different students so that learning is more meaningful and enjoyable. (2) Learning is designed and implemented to build the capacity to be lifelong learners. (3) The learning process supports the holistic development of students' competencies and characters. (4) Relevant learning. (5) Learning oriented toward a sustainable future (Sufyadi *et al.*, 2021). In order to meet these learning principles, educators can design and implement differentiated learning.

Differentiated learning seeks to meet students' learning needs (study readiness, interests, and learning profiles) (Yani *et al.*, 2023). In differentiated learning, teachers facilitate different students' learning needs to achieve competencies and learning outcomes. Differentiated learning has aspects that include differentiation of content, processes, and products.

Content differentiation is the content or material taught according to the learning needs of students. Process differentiation is a way or strategy students use to understand and interpret what is learned according to their learning needs. Product differentiation is the product or work of students to show what has been learned.

Over the past seven years, many studies have been on implementing

differentiated learning in Indonesian education units. To determine the extent of the implementation of differentiated learning in Indonesian education units, an analysis of the results of previous research using literature reviews is needed.

One of the studies that conducted a literature review on the implementation of differentiated learning was by Safarati & Zuhra (2023). This research examines articles that contain differentiation in learning in secondary schools (junior and senior high schools). The reviewed article only focused on implementing differentiated learning in Secondary Schools, the range of research in 2021-2022, and was only published in national journals.

Research that uses literature reviews to examine the implementation of differentiated learning specifically is still small, so researchers use literature reviews to examine the implementation of differentiated learning in Indonesian education units. The reviewed articles are research articles on differentiated learning at the elementary and secondary school levels, the range of research in 2016-2023, and from national and international journals.

This study aims to track information and describe the results of implementing differentiated learning that has been used in Indonesian education units. This literature review was conducted to determine the success of differentiated learning in improving the quality of learning and students' abilities. The results of this differentiated learning literature review can be a guideline for readers who want to improve the quality of learning and students' abilities through differentiated learning.

METHOD

This research is included in a literature review by reviewing related articles that aim to find scientific and theoretical

studies. This study employed a library study. It is a series of activities that concentrate on gathering library information on objects of research that can be received from various information resources, including scientific journals, encyclopedias, articles, and magazines (Sukmadinata, 2012). The data acquired in this observation are secondary facts from various scientific journals, articles, theses, and other journals, which can be greater. The journal used comes from a Google Scholar search that meets the mandatory criteria for research. This study reviews various research journals on "differentiated learning" published in the last ten years and indexed in Sinta or International Journals. The selected journals are 46 journals, 35 Sinta-accredited journals, and 11 international journals. The following are the steps of content analysis: (1) Formulating and defining the object of research and action based on the research objectives, (2) Conducting the selection of the unit of analysis to be studied by selecting the object of research that was used as the target of analysis, (3) Using words and sentences that were relevant, (4) Classifying activities that have been carried out by analyzing the extent to which the unit meaning related to the purpose of the research objectives, (5) Creating categories and units of meaning units to find the relationship between one another to get the meaning and purpose of the communication, and (6) Describing the results of the analysis.

RESULT AND DISCUSSION

The author reviews several scientific articles to determine the application of differentiation learning. The following are 16 (sixteen) articles related to the application of differentiated learning at the elementary, junior high, and high school levels.

Table 1 Analysis of literature search synthesis

No	Author(s)	Journal (Year, Vol, No, p)	Article Title	Research Method	Research Results	Status
1.	Sion Stepani Simanjuntak, Tanti Listiani	Jurnal Pendidikan dan Kebudayaan (Year 2020, Vol. 10 No. 2, pp. 134-141)	Pembelajaran <i>Differentiated Instruction</i> dalam Meningkatkan Pemahaman Konsep Matematika Siswa Kelas 2 SD	Classroom Action Research (CAR)	After the first action, students' test results increased by 56%, so 22 passed the multiplication material test. After re-conduct, students' test results improved by 12%, resulting in an entire class of 25 students) can pass the division material test.	accredited in SINTA 3
2.	Desy Aprima and Sasmita Sari	Jurnal Ilmiah Pendidikan (Year 2022, Vol. 1, No. 13. Pp. 95-101)	<i>Analisis Penerapan Pembelajaran Berdiferensiasi dalam Implementasi Kurikulum Merdeka pada Pelajaran Matematika SD (Differentiated Learning Application Analysis in Implementation of Merdeka Curriculum on SD Mathematics Subject)</i>	Descriptive Qualitative	The completion percentage of classical learning objectives in the first cycle is 76.87%, meaning that students can already meet or are adequate in achieving learning objectives. In cycle II, there is an increase in understanding of 5 indicators of learning objectives, which amounted to 90.63% of students who have mastered or achieved learning objectives.	Accredited in SINTA 5
3.	Dedi Iskandar	Jurnal Pendidikan dan Pembelajaran Indonesia (JPPI) (The year 2021, Vol.1, No. 2, pp. 123-140)	<i>Peningkatan Hasil Belajar Siswa pada Materi Report Text melalui Pembelajaran Berdiferensiasi di Kelas IX.A SMP Negeri 1 Sape Tahun Pelajaran 2020/2021 (Improving Student Learning Results on</i>	Classroom Action Research (CAR)	Student learning outcomes Experienced an increase from the initial pre-cycle condition obtained at 36.36% to 66.67% in cycle I and 90.91% in cycle II with standard criteria Minimum completeness is 75.	accredited in SINTA 4

No	Author(s)	Journal (Year, Vol, No, p)	Article Title	Research Method	Research Results	Status
			Materials Report Text through Differentiated Learning in Class IX.A SMP State 1 Sape Academic Year 2020/2021)			
4.	Devi Kurnia Fitra	Tunjuk Ajar: Jurnal Penelitian Ilmu Pendidikan (Year 2022, Vol. 5, No. 2, pp. 278-290)	<i>Analisis Penerapan Pembelajaran Berdiferensiasi dalam Kurikulum Merdeka pada Materi Tata Surya di Kelas VII SMP (Differentiated Learning Application Analysis in the Merdeka Curriculum on Solar System Materials in Class VII SMP)</i>	Classroom Action Research (CAR)	The percentage of classical learning goal completeness in cycle I was 76.87%; students could already achieve learning goals. In cycle II, there was an increase in understanding of the five indicators of learning objectives by 90.63% of students who had mastered achieving learning objectives.	Accredited in SINTA 6
5.	Fiky Hanaunna diya, Mira Azizah, Mei Fita Asri Untari, Elis Dwi Purbiyanti	Jurnal Pendidikan dan Konseling (Year 2023, Vol. 5, No. 2, pp. 678-685)	<i>Implementasi Pembelajaran Berdiferensiasi pada Siswa Kelas IV SD Negeri Pedurungan Kidul 01 Kota Semarang (Implementati on of Differentiated Learning on Students of Class IV SD State Pedurungan Kidul 01 Semarang)</i>	Descriptive qualitative	Assessment results in Non-cognitive diagnostics obtained from the results of student learning styles are 45% visual, 21% auditory, and 33% kinesthetic. 80% of students responses showed a sense of excitements responses showed a sense of excitement. Summative assessment results show that 77% of students completed in the understanding of	Accredited in SINTA 5

No	Author(s)	Journal (Year, Vol, No, p)	Article Title	Research Method	Research Results	Status
					the given material.	
6.	Imrotun Khasanah, Alfiandra	Jurnal Pendidikan dan Konseling (Year 2023, Vol. 5, No. 1, pp. 5324-5327)	<i>Implementasi Pembelajaran Berdiferensiasi dalam Upaya Meningkatkan Motivasi Belajar Kelas IX di SMPN 33 Palembang (Implementati on of differentiated learning to increase the learning motivation of Class IX at SMPN 33 Palembang)</i>	Descriptive Qualitative	Student learning motivation in the initial observation made as many as 40% of students lack enthusiasm or motivation for learning activities. After differentiated learning, only about 5% of students are still lacking motivated in learning activities.	Accredited in SINTA 5
7.	Rita Prima Bendriyan ti, Citra Dewi, Ismi Nurhasana h	Jurnal Pendidikan (Year 2021, Vol.6, No.2, pp. 72-73)	<i>Manajemen Pembelajaran Berdiferensiasi dalam Meningkatkan Kualitas Belajar Siswa (Differentiated Learning Management in Improving Student Learning Quality)</i>	Classroom Action Research (CAR)	The quality of student learning in terms of aspects of learning interest in the first cycle was 64.49%, and there was an increase of 76.78% in the second cycle. The quality of student learning from other aspects of the learning process that rely on student learning outcomes was 83.92% in cycle I and increased to 96.333% in cycle II.	Accredited in SINTA 3
8.	I Made Yadnya Tresna Putra	<i>Indonesian Journal of Educational Development</i> (Year 2021 Vol.2, No.3, pp. 461-471)	<i>Implementasi Pembelajaran Flipped Classroom Ber basis Strategi Diferensiasi untuk Meningkatkan Keterampilan Berpikir Kritis Peserta Didik</i>	Classroom Action Research (CAR)	The results showed that the student's critical thinking skills increased from a mean score of 80.10 in Cycle I to 82.12 in Cycle II. This increase is due to the application of Cycle I reflective outcomes, one of	Accredited in SINTA 4

No	Author(s)	Journal (Year, Vol, No, p)	Article Title	Research Method	Research Results	Status
			(Implementing Flipped Classroom Learning Based on Differentiation Strategies to Improve Critical Thinking Skills of Students)		which is related to conducting learning considering students' learning needs.	
9.	Lucky Taufik Sutrisno, Asep Hery Hernawan	Collase (<i>Creative Of Learning Students Elementary Education</i>) (Year 2023, Vol.6, No.1, pp. 111–121.)	<i>Penerapan Pembelajaran Berdiferensiasi sebagai Salah Satu Pemecahan Masalah Masih Kurangnya Keaktifan Peserta Didik saat Proses Pembelajaran Berlangsung</i> (Applying Learned Differentiated as one dissolved Problems still Lessly Activity Players During the process. Learned Continued)	Classroom Action Research (CAR)	Based on the results of the observation instrument, In the first cycle of the instrument, the results observation sheet obtained data on the focus indicator, which showed an increase of 50.00% in cycle 2. On the cooperation indicator, the increase was 57.69% in the second cycle, while the increase on the third indicator about putting forward opinions/ideas was 57.70% in the second cycle. The indicator solution to problems increased by 22.57% in the second cycle, and the last indicator, namely discipline, increased by 30.77% in the second cycle. Student activity obtained from questionnaire instrument students obtained data biggest increase on	Accredited in SINTA 5

No	Author(s)	Journal (Year, Vol, No, p)	Article Title	Research Method	Research Results	Status
					the focus indicator of 46.16% of the first cycle up to that cycle second. Whereas for upgrade smallest on the indicator problem solving by 15.39%, for indicators cooperation increased by 50.00%, indicator third happened an increase of 46.15%, and the discipline indicator increased by 26.39%. Good use of observational instruments as well as questionnaires both shows increases in five indicators of participant activity, most of the observations occurring on the indicator of cooperation, and proven active students when studying for groups according to their learning styles, so it happened that relationships were interactive among members of the group.	
10	Adi Pratama	Jurnal Didaktika Pendidikan Dasar (Year 2022, Vol. 6, No. 2, pp. 605- 626)	<i>Strategi Pembelajaran Berdiferensiasi untuk Meningkatkan Kemampuan Literasi Membaca Pemahaman Siswa (Differentiated Learning</i>	Descriptive Qualitative	The differentiated learning approach in the context of learning readiness can improve the reading comprehension literacy skills of 5th-grade students of SDN Larangan 2 Cirebon City. This can also be seen	Accredited in SINTA 5

No	Author(s)	Journal (Year, Vol, No, p)	Article Title	Research Method	Research Results	Status
			Strategies to Improve Students' Literacy Reading Ability)		from increased percentages before and after using differentiated learning strategies that increased significantly.	
11	Elida Gries Simbolon, Beslina Afriani Siagian, Kartini Bangun, Sara Sidabuta, Adella Girsang, Ancient Febiola	Jurnal Pendidikan Kebahasaan, dan Kesusastraan Indonesia (Diglossia) (Year 2022, Vol. 6, No.2, pp. 386-394)	<i>Penerapan Pembelajaran Berdiferensiasi dalam Menulis Teks Persuasi di Kelas VII SMP Gajah Mada Medan Tahun Ajaran 2021/2022 (Applying Learned Differentiated Inside Writing text Persuasion in the Seventh Grade of Gajah Mada Medan Academic Year of 2021/2022)</i>	Qualitative Research	The ability of learners to write persuasive texts increased after differentiation learning was applied; at the time of the pretest, the top score was 80, and the lowest was 50; after the posttest, the top score was 90, and the lowest was 76. Student learning outcomes also increased from an initial 50–56% score to 76–83% after differentiation learning.	accredited in SINTA 4
12	Ricky Avandra, Desyandri	Didaktik: Jurnal Ilmiah PGSD STKIP Subang (Year 2022, Vol. 8, No. 2, pp. 2944–2960)	<i>Implementasi Pembelajaran Berdiferensiasi Terhadap Keterampilan Berpikir Kritis Siswa pada Pembelajaran IPA Kelas VI SD (Implementati on of differentiated learning versus critical thinking skills of students on learning IPA</i>	Descriptive Qualitative (CAR)	Based on the results of the analysis on Cycle I and II actions can known increase students' critical thinking skills from I cycle the action, i.e. 40% category. good increased to 87.5% at cycle II. While skills Critical thinking using tests questionnaire in the cycle I obtained Categories are	accredited in SINTA 5

No	Author(s)	Journal (Year, Vol, No, p)	Article Title	Research Method	Research Results	Status
			Class VI of elementary school)		enough with a percentage. 80% and increases in cycle II Good category by percentage 83.75 %.	
13	Ayten Pinar BAL	Eurasian Journal of Educational Research, Issue 63, 2016, 185-204	The Effect of the Differentiated Teaching Approach in the Algebraic Learning Field on Students' Academic Achievements	Mixed methods research type in which qualitative and quantitative methods	The final pretest results obtained in the experimental group were greater, namely 17.39, and in the control class, 13.39. At the point of persistence, the experimental group obtained 17.48 and the control group 14.41	International Journal (Q3)
14	Toto Ruhima, Deni Darmawan	Advances in Science, Technology and Engineering Systems Journal Vol. 5, No. 6, 52-62 (2020)	Development of Group-Based Differentiated Learning (GBDL) Models	Research and development methods in education	The result of the take a look at shows that the averages for the pretest, posttest and advantage for the experimental group had been 3.9641; 7.4196, and 0.5693, while the manipulate groups had 3.7935; 6.8717, and 0.4891 respectively	International Journal (Q3)
15.	Enung Hasanah, Suyatno, Ika Maryani, M Ikhwan Al Badar, Yanti Fitria and Linda Patmasari	Educ. Sci. (2022, 12, 650)	Conceptual Model of Differentiated Instruction (DI) Based on Teachers' Experiences in Indonesia	Phenomenology	This study indicates that the conceptual model of differentiated learning is learning that provides opportunities for students to walk on their tracks; it also provides learning that emphasizes students' physical and mental welfare and safety in the learning process. T	International Journal (Q2)
16.	Hilary Dack	Teaching and Teacher	Structuring teacher	Qualitative research	This finding reinforces the	International Journal

No	Author(s)	Journal (Year, Vol, No, p)	Article Title	Research Method	Research Results	Status
		Education 69 (2018) 62e74	candidate learning about differentiated instruction through coursework	design	results of previous research and expands the existing literature regarding how the pedagogical experience of teacher education supports appropriation.	(Q1)

The authors had analyzed 16 research articles conducted by Simanjuntak & Listiani (2020), Aprima & Sari (2022), Iskandar (2021), Fitra (2022), Azizah *et al.*, (2023), Khasanah & Alfiandra (2023), Bendriyanti *et al.*, (2021), Putra (2021), Sutrisno (2023), Siagian *et al.*, (2022), Avandra (2022), Pratama (2022), Bal (2016), Ruhimat & Darmawan (2020), Hasanah *et al.*, (2022), and Dack (2018). Regarding the application of differentiated learning in Indonesian education, it was explained that six research studies used Classroom Action Research (*CAR*), seven types of descriptive qualitative research, and two types of experimental research by testing the dependent variables and one type of phenomenology.

The type of qualitative research is also called natural research or natural research. Type of qualitative research is a type of research that prioritizes emphasis on processes and meanings that are not tested or measured precisely with data in the form of descriptive data. According to Yuliani (2018), the advantages of qualitative research lie in the flexibility of researchers to describe the flow of research with very open research problems. Based on a review article from Siagian (2022), the purpose of using a quantitative approach is to obtain information more clearly and accurately. Experimental research was conducted by comparing the results before and after treatment. The experiments applied to humans are

called pseudo-experiments or quasi-experiments because the environment that affects the research results cannot be controlled. The advantages of experimental research are that it is systematic, logical, and thorough in controlling conditions (Gainau, 2016). Meanwhile, phenomenology is a research method that aims to explore phenomena through the experiences of participants who experience the phenomenon being studied directly.

CAR is research often carried out to determine the effectiveness of treatment given to students; *CAR* is research that raises certain actions in class to determine the effect of these actions on the class. Actions can be in the form of selecting the latest learning methods, applying certain learning strategies, using certain media and learning resources, certain types of classroom management, or other innovative things (Nurizzati & Nurjati, 2014). In *CAR*, there is rarely success that can be achieved in one action; therefore, *CAR* is often applied in several action cycles (Mulyatiningsih., 2015). According to Kunlasomboon *et al.* (2015), *CAR*, in a broader sense, can help advance learning in schools because it benefits both at the individual and organizational levels.

The journals used have various target levels ranging from elementary, junior high, and high school. Besides that, it is also applied in various subjects, namely mathematics, literacy, English, natural science, and literacy. In addition to

learning, it is also applied to increase student motivation, critical thinking skills, learning quality, and student activity. This indicates that flexible differentiated learning is used at all levels and in various fields. Differentiated learning places students at the center of learning, with teachers as facilitators who facilitate the diverse learning needs of students. The portion of facilities provided by teachers also decreases along with students' education level.

From several journals used, it was revealed that research related to differentiated learning was carried out using a Merdeka curriculum. According to Aprima & Sari (2022), implementing the Merdeka curriculum is more flexible than previous curricula. Therefore, differentiated learning cannot be separated from a Merdeka curriculum. This is because differentiated learning aims to accommodate all the learning needs of different students. According to Morgan (2014), differentiated learning is a way of teaching adapted to the characteristics of students with a variety of talents, interests, and learning styles. Therefore, teachers are expected to be able to understand their students, including those related to various injustices that may occur in the lives of students both inside and outside the school environment (Mills et al., 2014). Teachers need to develop insight and awareness regarding the diversity of students. The conceptual learning model applies a combination of progressive insight and teacher skills in creating contextual learning systems. Differentiated learning focuses not on transfer but on the development of student competence.

Based on the results of research presented in several journals of the type CAR and descriptive qualitative research, it is known that differentiated learning can increase research results by around 50% in cycle I and about 90% in

cycle 2. Based on the type of experimental research, there were significant differences in students before and after the learning treatment. This is in line with the results of Saputra & Marlina's (2020) research, which states that based on the research, it was found that differentiated learning strategies are effective in increasing the learning concentration of students who have learning difficulties. In order for differentiated learning to be expected to improve student learning outcomes. Herwina (2021) states that differentiated learning is expected to improve student learning outcomes according to their interests. The findings of Dack (2018) reveal the results of previous research and expand on the existing literature on depictions of how teacher education pedagogical experiences support appropriation.

There are several innovations that teachers can adopt to develop learning for students from some of the literature used. One of these innovations involves applying differentiation learning. Differentiated learning is important for developing students' abilities at various cognitive levels. According to Azizah (2023), differentiated learning in students shows progress in a learning process that is active, communicative, and can involve almost all students. The use of an independent curriculum is an important thing that teachers can apply. An independent curriculum creates active and creative learning (Aparima, 2022). In addition, CAR is also very well done by teachers in order to achieve an increase in the quality of learning in the classroom. Khasanah's research (2023) showed increased learning motivation after conducting CAR for two cycles.

Several journals related to differentiated learning were reviewed, but only a few discussed the differentiated learning component. Differentiated learning has four

components: differentiation of the content of the material presented (content), differentiation of students' material understanding processes, differentiation of output (products), and differentiation of student learning environments. The four components are interrelated to provide optimal treatment results.

According to Marlina (2019), the relationship between the four components includes the following: 1) Differentiation of content relates to students' study material. The teacher modifies the curriculum and learning materials based on students' learning styles and conditions. 2) Process differentiation is related to students processing the information received to make it happen as an output. In this case, the interaction of students with the material and how that interaction becomes a part of their learning choices. 3) Product differentiation is related to the output produced by students. In this case, students can produce products according to their talents and interests. 4) Differentiation of the learning environment: The teacher must provide a learning environment according to the differences between students so that each student is comfortable in the learning process.

CONCLUSION

Based on the literature review that has been carried out, it can be concluded that: first, the differentiated approach can be integrated with several learning models such as problem-based learning, project-based learning, as well as the flipped classroom and focuses on student learning styles. Secondly, the application of a differentiated approach is able to improve student learning outcomes, student learning motivation, understanding, and quality of student learning. Thirdly, the differentiated approach can be applied in physics learning because it is able to

accommodate students' learning needs by paying attention to their interests, profiles, learning styles, and learning readiness. The results of this study have implications that can affect the application of differentiated learning evenly throughout Indonesian education units and are expected to be used as a reference for teachers in improving the learning process to be more responsive to the needs of students.

The suggestions that the author can convey are: (1) looking at the data from literature studies that show that there is still limited research on differentiated approaches in Indonesia. Further research is needed on the impact of differentiated approaches on creativity, critical thinking, collaboration, or problem-solving abilities, specifically in physics learning; (2) teachers need to conduct diagnostic assessments first to determine student interests, profiles, learning styles, and learning readiness before implementing differentiated learning.

REFERENCES

- Aprima, D., & Sari, S. (2022). Analisis penerapan pembelajaran berdiferensiasi dalam implementasi kurikulum merdeka pada pelajaran matematika sd. *Cendikia: Media Jurnal Ilmiah Pendidikan*, 13(1), 95–101.
- Avandra, R. (2022). Implementasi pembelajaran berdiferensiasi terhadap keterampilan berpikir kritis siswa pada pembelajaran ipa kelas vi sd. *Didaktik: Jurnal Ilmiah PGSD STKIP Subang*, 8(2), 2944–2960.
- Azizah, M., Untari, M. F. A., & Purbiyanti, E. D. (2023). Implementasi pembelajaran berdiferensiasi pada siswa kelas iv sd negeri pedurungan kidul 01 kota semarang. *Jurnal Pendidikan Dan Konseling (JPDK)*, 5(2), 678–685.
- Bal, A. P. (2016). The effect of the differentiated teaching approach in

- the algebraic learning field on students' academic achievements. *Eurasian Journal of Educational Research*, 16(63).
- Bendriyanti, R. P., Dewi, C., & Nurhasanah, I. (2021). Manajemen pembelajaran berdiferensiasi dalam meningkatkan kualitas belajar siswa kelas ix smpit khairunnas. *JP (Jurnal Pendidikan): Teori Dan Praktik*, 6(2), 70–74.
- Biesta, G. (2015). What is education for? on good education, teacher judgement, and educational professionalism. *European Journal of Education*, 50(1), 75–87.
- Dack, H. (2018). Structuring teacher candidate learning about differentiated instruction through coursework. *Teaching and Teacher Education*, 69, 62–74.
- Darmawan, I. P. A., & Sujoko, E. (2019). Understanding ki hadjar dewantara's educational philosophy. *International Journal of Humanities and Innovation (IJHI)*, 2(3), 65–68.
- Febriyanti, N. (2021). Implementasi konsep pendidikan menurut ki hajar dewantara. *Jurnal Pendidikan Tambusai*, 5(1), 1631–1637.
- Ferary, D. (2021). On ki hadjar dewantara's philosophy of education. *Nordic Journal of Comparative and International Education (NJCIE)*, 5(2), 65–78.
- Fitra, D. K. (2022). Analisis penerapan pembelajaran berdiferensiasi dalam kurikulum merdeka pada materi tata surya di kelas vii smp. *Unjuk Ajar: Jurnal Penelitian Ilmu Pendidikan*, 5(2), 278–290.
- Gainau, M. (2016). Pengantar metode penelitian. Yogyakarta : PT.Kasinius
- Hasanah, E., Suyatno, S., Maryani, I., Badar, M. I. Al, Fitria, Y., & Patmasari, L. (2022). Conceptual model of differentiated-instruction (di) based on teachers' experiences in indonesia. *Education Sciences*, 12(10), 650.
- Herwina, W. (2021). Optimalisasi kebutuhan murid dan hasil belajar dengan pembelajaran berdiferensiasi. *Perspektif Ilmu Pendidikan*, 35(2), 175–182.
- Iskandar, D. (2021). Peningkatan hasil belajar siswa pada materi report text melalui pembelajaran berdiferensiasi di kelas ix. a smp negeri 1 sape tahun pelajaran 2020/2021. *Jurnal Pendidikan Dan Pembelajaran Indonesia (JPPI)*, 1(2), 123–140.
- Khasanah, I., & Alfiandra, A. (2023). Implementasi pembelajaran berdiferensiasi dalam upaya meningkatkan motivasi belajar kelas ix di smpn 33 Palembang. *Jurnal Pendidikan Dan Konseling (JPDK)*, 5(1), 5324–5327.
- Kunlasomboon, N., Wongwanich, S., & Suwanmonkha, S. (2015). Research and development of classroom action research process to enhance school learning. *Procedia-Social and Behavioral Sciences*, 171, 1315–1324.
- Marlina, M. (2019). *Panduan pelaksanaan model pembelajaran berdiferensiasi di sekolah inklusif*. Padang: UNP.
- Masitoh, S., & Cahyani, F. (2020). Penerapan sistem among dalam proses pendidikan suatu upaya mengembangkan kompetensi guru. *Kwangsan: Jurnal Teknologi Pendidikan*, 8(1), 122–141.
- Mills, M., Monk, S., Keddie, A., Renshaw, P., Christie, P., Geelan, D., & Gowlett, C. (2014). Differentiated learning: From Policy to classroom. *Oxford Review of Education*, 40(3), 331–348.
- Morgan, H. (2014). Maximizing student success with differentiated learning. the clearing house. *A Journal of Educational Strategies, Issues and Ideas*, 87(1), 34–38.
- Mulyatiningsih, E. (2015). Metode penelitian tindakan kelas. *Modul Pelatihan Pendidikan Profesi Guru*:

- Fakultas Teknik, Universitas Negeri Yogyakarta. Universitas Negeri Yogyakarta.*
- Nurizzati, Y., & Nurjati, J. (2014). Ketertolakan laporan hasil kpenelitian tindakan kelas. *Jurnal Edueksos*, 3(1), 135–152.
- Pratama, A. (2022). Strategi pembelajaran berdiferensiasi meningkatkan kemampuan literasi membaca pemahaman siswa. *Jurnal Didaktika Pendidikan Dasar*, 6(2), 605–626.
- Putra, I. M. Y. T. (2021). Implementasi pembelajaran flipped classroom berbasis strategi diferensiasi untuk meningkatkan keterampilan berpikir kritis peserta didik. *Indonesian Journal of Educational Development*, 2(3), 461–471.
- Ruhimat, T., & Darmawan, D. (2020). Development of group-based differentiated learning (gbdl) models. *Advance Science Technology Engineering System Journal*, 5, 52–62.
- Safarati, N., & Zuhra, F. (2023). Literature review: Pembelajaran berdiferensiasi di sekolah menengah. *Genta Mulia: Jurnal Ilmiah Pendidikan*, 14(1).
- Saputra, M. A., & Marlina, M. (2020). Efektivitas strategi pembelajaran berdiferensiasi untuk meningkatkan konsentrasi belajar anak berkesulitan belajar. *PAKAR Pendidikan*, 18, 94–104.
- Siagian, B. A., Simbolon, E. G., Bangun, K., Sidabutar, S., & Girsang, A. (2022). Penerapan pembelajaran berdiferensiasi dalam menulis teks persuasi di kelas viii smp gajah mada medan tahun ajaran2021/2022. *Diglosia: Jurnal Pendidikan, Kebahasaan, Dan Kesusastraan Indonesia*, 6(2).
- Simanjuntak, S. S., & Listiani, T. (2020). Penerapan differentiated instruction dalam meningkatkan pemahaman konsep matematika siswa kelas 2 sd. *Scholaria: Jurnal Pendidikan Dan Kebudayaan*, 10(2), 134–141.
- Sufyadi, S., Lambas, L., Rosdiana, T., Rochim, F. A. N., Novrika, S., Iswoyo, S., Hartini, Y., Primadonna, M., & Mahardhika, R. L. (2021). *Pembelajaran paradigma baru*. Pusat Asesmen dan Pembelajaran.
- Sukmadinata, N. S. (2012). *Metode penelitian pendidikan*. PT Remaja Rosdakarya. Bandung.
- Sutrisno, L. T. (2023). Penerapan pembelajaran berdiferensiasi sebagai salah satu pemecahan masalah masih kurangnya keaktifan peserta didik saat proses pembelajaran berlangsung. *COLLASE (Creative of Learning Students Elementary Education)*, 6(1), 111–121.
- Towaf, S. M. (2016). The national heritage of ki hadjar dewantara in tamansiswa about culture-based education and learning. *Journal of Education and Practice*, 7(23), 167–176.
- Yani, D., Muhanal, S., & Mashfufah, A. (2023). Implementasi asesmen diagnostik untuk mennetukan gaya belajar siswa dalam pembelajaran berdiferensiasi di sekolah dasar. *Jurnal Inovasi Dan Teknologi Pendidikan (JURINOTEP)*, 1(3), 241–250.
- Yuliani, W. (2018). Metode penelitian deskriptif kualitatif dalam perspektif bimbingan konseling. *Quanta Jurnal*, 2(2), 83-91.