An Analysis of Learning Styles on Renewable Energy Material in Independent Curriculum for Differentiation Learning

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Abstract

This study aims to analyze the effectiveness of student learning styles on renewable energy material in the independent curriculum for differentiation. This research is a qualitative descriptive study. The method used was a learning style survey in the form of a questionnaire developed by Chislett and Chapman, which was conducted on 30 students in class X.4 of SMA Negeri 3 Banyuasin III. The results of the learning style survey were then analyzed and grouped by researchers according to the characteristics of learning styles, namely 50% visual learning style, 30% audio learning style, and 20% kinesthetic learning style. These results indicate that the tendency of students' learning styles varies in one class. Furthermore, a pretest and posttest assessment of renewable energy material was held for students. As for the results of the analysis of pretest, posttest, and gain learning outcomes, the average obtained by visual students was 19.3, audio 22.6, and kinesthetic 23.3 for posttest visual learning styles (77.0, audio 78.3, and kinesthetic 81.0), and visual gain was 57.7, audio 55.7, and kinesthetic 57.6. N-gain was analyzed to see the increase in learning outcomes, which obtained results for an average visual learning style of 0.71, audio 0.72, and kinesthetic 0.75. From this analysis, it can be concluded that differentiated learning with the learning style of renewable energy material can increase the number of students learning in the high category.
Keywords: Differentiated Learning; Independent Curriculum; Learning Styles

How to cite: Rolipa, R., Wiyono, K., Sudirman, S., Fathurohman, A., & Marliana, L. (2023). An analysis of learning styles on renewable energy material in independent curriculum for differentiation learning in state high school 3 Banyuasin III. *Jurnal Ilmiah Pendidikan Fisika*, *7*(2), 328-341.

INTRODUCTION

Education in Indonesia generally hosts classical mass education, where teachers are the center of learning. Education is a survival technique for humans; it proves that humans need to adapt to the progress of the times (Aldrich, 2010; Maulinda, 2022). Teachers do not see that students have different uniquenesses. A teacher's primary task is to respond to the individual needs of each student so that they maximize their
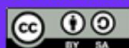
learning (Dixon et al., 2014; Smaldino et al., 2012). As a primary figure in the fundamental duty of a teacher in advancing national education, teachers must know that each student has unique and diverse ideals, intelligence, talents, and abilities (Faiz et al., 2022; Harto et al., 2023). Teachers as facilitators of learning cannot avoid the diversity of students that occurs in a class, especially in deciding the use of learning to be done (Siburian et al., 2019). On February 10, 2022, the new learning paradigm was officially formalized as the Merdeka Curriculum based on Kemendikbudristek No. 56/M/2022.

Independent curriculum provides the availability of educational units for developing learning adapted to the circumstances in the school environment and always on the side of the student. The independent curriculum has been adapted into a more flexible curricular framework that harmonizes core materials that foster the uniqueness and ability of students (Hidayat et al., 2023; Rahayu et al., 2021). Independent curriculum has the concept of "Free learning," which means giving freedom to schools, teachers, and students to innovate, learn independently, and create, where the movement starts with the teacher (Sherly et al., 2020). Before starting the learning process, educators always pay attention to the needs of students, such as student readiness, student interests, and student learning profiles that include student learning styles and learning environments. Then, educators facilitate student learning needs. As a result, learning on an independent curriculum is designed with differential learning.

Differential learning is a teacher's effort to teach in class by always paying attention to each student's learning needs. Differential learning is a way for teachers to respond to the needs of each student because Learning enables students to learn in each lesson that

matches their abilities, interests, and talents needs; eventually, students do not feel frustrated and do not feel like they have failed in learning (Tomlinson & Moon, 2013). Differential learning is a learning approach tailored to meet each student's unique learning needs, which ultimately supports the existence of an independent curriculum.

Government Regulations related to the Implementation of the Independent Curriculum of Kepmendikbudristek No. 56/2022 on the Guidelines of the Learning Recovery Curriculum (Independent Curriculum) implementation to guide the implementation of new curricula in schools that have not been identified as mobility schools. Marlina (2019) stated that differential learning should consider the student's ability and learning needs following the student-centered learning profile, and teachers should always pay attention to student learning needs. In differential learning, teachers are responsible for the material taught to the student by paying attention to students' readiness, interests, and learning styles (Fadilla et al., 2021; Morgan, 2014). This learning requires the attention and action of teachers to meet the special needs of students by paying attention to one of the needs, which is the student's learning style, in the learning and learning activities.

Learning style is the most important way students learn (Sari, 2014; Vaishnav & Chirayu, 2013). Learning style refers to a particular student's way of learning. A child's learning style is how they accept something new when learning. Student learning style refers to the approach or method the student prefers to understand the lesson well. In understanding the lesson well in the learning process, students are happy to hear what the teacher tells them; some want to be read and written directly in the book; some students want to practice and apply it in person. According to

DePorter & Hernacki (2007), learning styles are important in improving school progress and in any relationship. When one realizes how they and others receive and process what they receive, they can facilitate learning and communication in their way. Learning is the combination of receiving, organizing, and processing information. Learning is a combination of receiving, organizing, and processing information. Learning will be successful and appropriate when children play with peers in a supportive environment, supervised by a teacher or a more experienced adult (Kim, 2020; Mariati et al., 2021). Teachers should not only concentrate on finding their students' strengths but also their weaknesses. This will help teachers reflect on the student's weaknesses and use specific strategies to build up their vulnerability (Ishaque, 2019) because there can be differences in learning styles in one class. There are three commonly known learning styles: visual, kinesthetic, and auditory (DePorter, 2007).

Independent curriculum learning is learning that takes into consideration the uniqueness of students, including the uniquity of learning styles, so in differential learning based on independent curricula, educators at the beginning of learning need to analyze the learning style of pupils so that educators can accurately compile a learning plan for students whose learning style is different.

Researchers consider it essential to map the learning style before the learning process occurs. With information about learning styles, a teacher can facilitate learning by following the students' style to produce effective learning. The researchers also stated that it was very important to do first differentiation learning because, based on the results of the summative test at the end of the semester of the learning year 2021–2022, there were still many students who met the criteria of learning accuracy. Based on the data from the sample of 30 students in class X, 26% have reached, and 93% have not reached the criteria of learning maturity on access to renewable energy. Both researchers compared the research conducted by Suhartini (2023) on differential learning in improving the learning results of students in physics class XA SMAN 3 Pandeglang on renewable energy material that only performed three test cycles and did not look at the student's learning style. In this study, the learning differentiation would be done by paying attention to each student's learning style. Thus, the title of this research is an analysis of the learning style of an independent curriculum for exploring the differential material of renewable energy at State High School 3 Banyuasin III.

This research aims to improve differential learning outcomes on renewable energy materials in class X by paying attention to the learning needs of students, one of which is the learning style of students at State High School 3 Banyuasin III as a driving school, whether effective or not. To evaluate the increase in learning outcomes, a preliminary assessment was carried out before the learning process in the form of a pretest of renewable energy materials based on the learning objectives and learning access. After that, the differential learning was done by paying attention to the learning style, and then the posttest was given at the end of the learning activity. Then, it was analyzed using calculations based on normalized gain scores according to Hake 1998 in Sari et al. (2021).

METHOD
Research using qualitative descriptives was conducted at State High School 3, Banyuasin III. The study subjects were a Grade X State High School 3 student, Banyuasin III. The reason the researchers chose this first school is that

this school is one of the schools selected as a driving school based on the decision of the Directorate-General of Early Childhood Education, Basic Education, and Secondary Education No. 0301/c/HK.00/2022 on the establishment of the Education Unit for the Implementation of the Program of Sekolah Penggerak Batch II. The second reason is the analysis of the needs of teachers teaching in mobility schools. The teacher needs analysis was done by spreading the questionnaire via the Google Form that is accessible on the https://forms.gle/7dKerkG8xT5vSyr9A page and obtaining the result that 70% of respondents have not done learning differentiation based on learning styles. Teachers only do learning differentiation, which is limited to the deferensification of the product of the students' duties. As for the sample taken in one class of 30 students in the final semester of the 2023–2024 academic year. The objective of taking a single class is that the researchers can get an idea of the diversity of learning styles among students in that class. An analysis of differences in student learning styles was done at the beginning before the teacher compiled the teaching module. The instrument was a learning style lift developed by Chislett & Chapman (2005) and distributed in the form of a Google Form via the link https://forms.gle/KVCxcG2qErLhXPhw6 sent to the students' phones. The study style survey consisted of 30 questions with a statement of double choice that matches the student's learning habits and styles. Statements in column A for student visual habits, column B for student auditorium habits, and column C for student kinesthetic habits. The students were asked to complete each question by clicking on options A, B, and C, where one of their answers reflected their habits. The student answered the instrument in just 15 minutes with a high level of concentration, and the environment around the test was calm so that the test results were maximized and showed the student's true learning style. The student test results were then analyzed by calculating how many students answered correctly. If the student scores the highest on answer A, the student tends toward a visual learning style. If the student scores the highest on the B answer, the student tends to have an auditory learning style. If the student scores the highest C answer, the student tends to have a kinesthetic learning style. The combination of learning styles also occurs in one student, so from the student's answers, the researchers can group students' visual kinesthetic learning style characteristics into visual audiotory and audiothetic audio. A student has two learning styles, then the researcher handed it over to the student to choose one of the styles they want after looking at the teaching material given. The researchers also restricted themselves to only three learning styles: visual, audio, and kinesthetic. Subsequently, students filled in questions about pretests and posts seen from the learning objectives based on phase E-learning access with renewable energy materials. To see the increase in learning results after students perform by answering 10 pretest and posttest questions in the form of essays, calculations were based on normalized N-gain scores according to Hake, 1998 in Sari et al. (2021). The researchers used N-gain as it was conducted by Wiyono's study (2012) on the increased mastery of the concepts of material physics based on learning styles experienced an increase in high categories in each student with a different learning style.

Table 1 Category of Potential Effects

N-gain	Criteria
N-gain $\geqslant 0{,}7$	High
$0{,}3 \leqslant$ N-gain $< 0{,}7$	Medium
N-gain $< 0{,}3$	Low

RESULTS AND DISCUSSION

This research study was conducted in the tenth grade of State High School 3, Banyuasin III, which consisted of 30 students: 17 female students and 13 male students. The researchers studied the needs of different learning styles: visual, auditory, and kinesthetic. Total student learning style survey of 30 questions, accompanied by a statement of student learning habits and styles. Statements in column A for student visual habits, column B for student auditorium habits, and column C for student kinesthetic habits. The students were asked to answer each question by clicking on the options A, B, and C, where one of their answers reflected their habits. The students answered the instrument in just 15 minutes with a high level of concentration, and the environment around the test should be calm so that the test results maximize and show the students' true learning style. The instrument was based on the learning style characteristics presented by Chislett & Chapman (2005) in Dariyani (2022). In addition to observation activities and interviews, the equipment was expected to provide a value corresponding to students' learning styles at State High School 3 Banyuasin III. The observation results showed that before the teachers perform the learning process, they need to pay attention to the learning needs of the students. It allows teachers to learn and see the diversity between students through visual learning through drawing and writing (graphic regulator), auditorium learning through listening (lectures, reading aloud, listening to music), and kinesthetic learning through practical practice (movement and stretching, crafting, etc.). The study of State High School 3 Banyuasin III aims to realize students' potential. Students are always allowed to boldly answer questions and communicate what they want in the form of their learning style.

Applying differential learning requires a preliminary analysis of student learning styles. According to Bell et al. (2017), learning style is an important factor that can help students succeed in learning. Ishikaku (2019) stated that learning style knowledge could help teachers create multi-sensory learning environments that best-fit students' unique needs. According to Setiana (2020), the learning style is a unique way of learning for students. Typical methods are individual, and students often do not realize that once they start to develop. These methods do not last long. According to Irawati (2021), learning style is about making someone feel easy, comfortable, and confident in learning in terms of time and taste. Therefore, students need to be supported and guided to find a learning style that fits their personal needs so that their learning goals can be effectively achieved (Kadir, 2020). Regarding the importance of designing learning, teachers should consider the diversity of their students' learning styles (Azrai, 2018) because by using the concept of diversity and acceptance of different learning styles, the teacher becomes more effective in determining learning strategies. Students are more confident and satisfied with their learning (Sari, 2019). Research conducted by Hanifah et al. (2021) stated that it consists of three common learning styles: learning through visual, audio, and kinesthetic means. Himmah (2023) and Damayanti (2022) mentioned that the learning style is composed of visual, audio, and kinesthetic means, taking into account the needs of students in the learning process. Therefore, in this research, the researchers analyze the learning style of students at State High School 3 Banyuasin III in learning differentiation curriculum independent renewable energy materials. The study results

indicate that the visual learning style is 50%, the auditorium 30%, and the kinesthetic 20%, as seen in Figure 1.

Figure 1 Diagram of students' learning styles of the tenth grade of SMAN 3 Banyuasin III

From the results of such an analysis, it can be stated that the learning styles are very different. Such differences in learning styles can provide an incentive for teachers to conduct a diagnosis of student learning needs.

The main material developed by the researcher is renewable energy material to learn based on learning access: 1) explaining the concept of enterprise, energy, and the law of continuity of energy; the substance of the enterprise material; the relationship between enterprise and energy; and the energy continuity law; 2) making a diagram of the form of energy and its transformation, as well as explaining the evolution with the core material content of the form and source of energy; 3) analyzing the constraints of energy sources and their impact, as well as designing the appropriate use of alternative energy sources in the environment with core materials of non-renewable energy content and renewable energies.

Then, before going further into the differential learning process, the teacher gave the students a pretest to see the results before the learning process of differentiation was carried out. Then, the teacher divided the four activities of renewable energy materials according to the indicators of learning achievement,

i.e., for the access phase of activity 1, namely: 1) Definition of enterprise 2) Definition of energy based on the concept of enterprise 3) Identification of the basic forms of energy that occur in everyday life; 4) Analysis of the energy forms that relate to daily life allocate two hours of lessons. Learning was divided into three groups according to the learning style we have already grouped. The sequence of activities started with pre-learning (content differentiation), in which the teacher patched the pictures of solar panels, water pins, and wind pins and explained them. For students with a visual learning style observing the picture shown by the teacher, for students with an audio learning style listening to the teacher's explanation, and for students with a kinesthetic learning style incorporating the origin of the energy source formed on each image. It then proceeded to the core of learning; the teacher directed the student to observe the case of the water pinch, seeking information on its usefulness and how it works. For students with visual learning styles, they read the news link about the water kit given by the teacher at https://madinapos.com/2021/12/27/warga-desa-silogun-manfaatkan-kincir-air-untuk-pembangkit-listrik/ or observe the case of the water kit opener available in the student book. For participants with an audio learning style, they watch the YouTube video link of the teacher's tentative water pinch. For participants with a kinesthetic learning style they practice the simple water pinch movements that the teacher has prepared. The teacher allows the students to communicate what information they would receive from the observation of the water pinch case or ask quietly what the use of the water pinch is and how it works.

Students with a visual learning style deliver it in written form. Meanwhile, students with the audio learning style

communicate orally, and students of the kinesthetic learning style transmit it orally and practice it in front of their friends. The teacher invited the students to think about the case in the context of the questions. 1) How much is connected to the water tap? 2) What kind of energy can be explored further than the potential of the water pinch? 3) Besides the water drawers, are there any other potential energy sources around you that are not yet exploited? The teacher gave the assignments in Worksheet 1 to all students. The students with visual learning styles gathered tasks in texting, comics, writing blocks, or other forms of writing. The students with an audio style explained the results of completion, and students with a kinesthetic learning style made another interactive display video in front of the classroom. The teacher led students to work on Worksheet 2 in groups of 2 to 3 students. A group of students with visual learning styles wrote down some of the magnitude and similarity in the energy and explained it in writing. The students with audio learning styles explained directly some magnitude and similarity in energy. They gave their explanations in person, and the students with kinesthetic learning styles pasted angular equations on the class walls, explained each of the magnitudes and similarities that exist in energy, and provided their expression in person. The teacher asked about the students' learning results today: "What's your most interesting finding?" The student was given a small piece of paper, and the teacher asked the student to write questions after doing today's activity.

Then, the teacher explained that the students would try together to analyze the results of the illustrations of the movement of the fruit that fell to the ground from the mechanical energy conversion at the next meeting. Next, the teacher instructed the students to write down the learning points they had acquired in this sub-chapter, and the teacher asked the student representatives to read what they had learned in today's learning activities. Activity 2 is 1) Analysis of applying the law of continuity of mechanical energy to everyday events. 2) Find problems related to energy availability in the residential environment. The sequence of activities began with pre-learning (content differentiation), where the teacher directed the students to observe the case illustration of the object falling to the ground. The students with visual learning styles could read the news link given to the teacher about the durian fruit falling on the earth's surface with the link or observe the illustration of the apple tree falling upon the earth's surface available in the sub-chapter of the student book. For the students with an audio learning style, they watched videos given to teachers about the law of energy persistence and energy conversion. Those with a kinesthetic learning style reacted directly to objects from trees that fell to the ground and portrayed them as equations. The teacher allowed the students to convey the information they received from observing the object fall to the ground. The students with visual styles communicated in writing, those with audio-learning styles delivered orally, and those with kinesthetic learning styles delivered orally and practiced it in front of their friends. The teacher asked the student to think of the case with the following questions: 1) What forms of energy are involved in free-fall movement? 2) Is there an energy occurrence when objects have different positions? Continue to the core of learning. The teacher directed the student to observe the mechanical energies experienced by objects at the initial position (A) when above and the final position (B) when below, as in the illustration of the given case.

Based on the mechanical energy equation, understanding the events and forms of motion energy of free fall

material before the teacher asks where in each group of learning styles the position of mechanical energy is equal to potential energy and mechanical power equals kinetic energy. The teacher emphasizes that 1) in the event of objects falling freely, at the moment of moving objects from place A to place B, energy changes. However, the value of the mechanical energy is constant. 2) The event applies the law of mechanical eternity. 3) Changes in the form of energy are called energy conversions. The teacher gives the assignments in Worksheet 3 to all the students. The students with visual learning styles gathered tasks through texting, comics, writing on blogs, or other forms of writing. The students with an audio-learning style explained their findings in person, and the kinesthetic learning style created videos or other interactive displays in front of the classroom. The teacher directed the student to read (visual) and listen (audio and kinesthetic) to explanations of the available data.

Emphasizing that energy has become a basic necessity to support mankind in daily work, it is vital to understand energy conversion. The teacher divided the Worksheets and led the students to work in groups. The teacher asked one group to present their work experience in the student worksheets 4 and 5, while the other group was asked to comment. The teacher insisted that Indonesia still needs to identify potential and natural resources to meet electricity needs and find availability in areas without electricity. At the end of the lesson, the teacher instructed the students to write down the learning points they achieved in this sub-chapter and asked the student representatives to read what they had learned in today's activity. Activity 3 was: 1) Detecting energy availability issues around the residential area, 2) Identifying potential energy sources around residential areas, and 3) Planning the design and construction of a device

or prototype that can consume energy to address the problem of energy availability. The sequence of activities began with pre-learning (content differentiation), where the teacher directed the student to find information about the energy sources that can be used. The students with visual learning styles looked for reading information on student book references or open student internet with audio. Then, the students with kinesthetic learning styles opened YouTube links about energy sources and looked for additional sources. The teacher asked the students to think in the context of the information obtained about energy sources and ask how electricity needs could be met in remote areas without electricity. The teacher's core of learning asks all students to complete the tasks in Worksheet 8. The students with visual learning styles gathered tasks through texting, comics, blogging, or other forms of writing. Students' style of learning through audio and kinesthetics explained the future. The teacher asked one of the groups to present a tool or a prototype tool made based on Parts A and B of the student worksheet 8. The teacher asked students to comment or give input on the design or prototype of the tool they made, and teachers to comment and give input. Next, the teacher instructed the students to write down the learning points acquired in this sub-chapter and invited them to review what they had learned from today's meeting.

Activity 4 was: 1) Developing a simple tool or prototype that can generate energy; 2) Improving the design of a tool or a simple energy generator that has been tested. The sequence of activities started with pre-learning, where the teacher directed the students to re-learn the information about energy sources that can be used today. Visual learning students searched for reading information on student book references or opened the internet. The students'

learning style through audio and kinesthetics unlocked videos teachers gave about energy sources and searched for other additional resources. The teacher asked the students to think in the context of the information obtained about energy sources and ask how the electricity needs in the area can be met in remote areas that are still without electricity. Next to the core of the defense is the teacher asking all the students to complete the tasks in Worksheet 8. The students with visual learning styles gathered tasks through texting, comics, writing on blogs, or other forms of writing. The students with audio and kinesthetic learning styles explained the future. The teacher asked one of the groups to display a presentation or prototype tool developed based on Parts A and B of Worksheet 8. The teacher asked students to comment or give input on the design tool or prototype tool they made, and the teacher gave comments and input. The teacher's learning closure instructed the students to write down the learning points they have acquired in this subchapter and asked the student representatives to read what they have learned in today's activities.

The teacher distributed material media according to the student's learning styles, such as the students whose visual material is like playing video, multiplying the use of images, and asking teachers always to write material on the board; the students who have audio characteristics such as video or sound to be listened to; and the students who are aesthetic of the given material's movement and practice. Then, the teacher distributed the Worksheet to the students. After the renewable energy material was completed in the study, the students were divided over the posttest. The question posttest was then analyzed further to evaluate whether the learning differentiation was effective. Then, the teacher began to use the calculation

based on the normalized gain score according to Hake 1998 in Sari et al. (2021). After N-gain scores were calculated, the learning results were analyzed in Tables 2, 3, 4, and 5, and then Figure 2 on comparison presentation of the pretest, posttest, and gain was created.

Table 2 Pretest and posttest of visual learning style

No	Initial	Pretest	Posttest	Gain
1	AN	25	70	45
2	AK	30	86	56
3	BA	5	70	65
4	CS	30	80	50
5	CL	5	75	70
6	MI	15	70	55
7	MR	30	70	40
8	MS	15	75	60
9	NM	35	86	51
10	NA	5	73	68
11	RH	20	85	65
12	RA	20	80	60
13	SA	30	86	56
14	SW	10	75	65
15	W	15	75	60
Average		77.0	19.3	57.7

Table 3 Pretest and postest of audio learning style

No	Initial	Pretest	Posttest	Gain
1	AZ	15	75	60
2	DM	30	80	50
3	DL	15	75	60
4	HK	36	86	50
5	IS	30	80	50
6	MY	30	75	45
7	RA	5	70	65
8	SR	20	86	66
Average		22.6	78.3	55.7

Table 4 Pretest and postest of kinesthetics learning style

No	Initial	Pretest	Posttest	Gain
1	AD	8	75	67
2	DJ	5	72	67
3	D	25	80	55
4	MT	30	86	56
5	P	36	87	51
6	RA	36	86	50
Average		23.3	81.0	57.6

Tabel 5 Analysis of learning outcomes

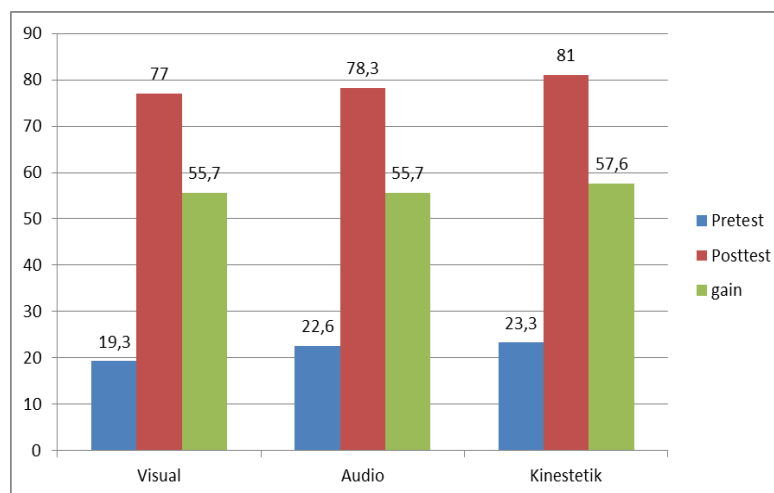| Aspect	Learning Styles (Average)		
	Visual	Audio	Kinesthetics
Number of student	15	8	7
Pretest	19.3	22.6	23.3
Postest	77.0	78.3	81.0
gain	57.7	55.7	57.6

Figure 2 Graph of the percentage comparison of pretest, posts, and N-gain of student learning styles: Visual (V), Audio (A), and Kinesthetic (K)

Based on Figure 2, it is seen that in the pretest, for the visual learning style of 19.3, the students obtained visual 19.3, audio 22.6, and kinesthetic 23.3, which still belong to this low level because differential learning has not been done. Meanwhile, the visual learning style averaged 77.0, audio 78.3, and kinesthetic 81.0 improved after differential learning, The gain assessment process for visual learning styles (55.7), audio (55.7), and kinetics (56.6) was then entered into the average N-gain score, and the effectiveness score of learning outcomes for visual study styles averaged 0.71, audio 0.72, and Kinesthetics 0.75. According to Table 1, N-gain data calculation results obtained a result of 0.72 because 0.72 shows differences in student learning results before and after different treatments in the high category. Based on research carried out by Kadir (2020), student learning styles influence high school physics learning outcomes. PGRI Maros and Bire (2019) found that there are influences of visual, audio, and kinesthetic learning outcomes on student performance; Wiyono (2012) developed a multimedia-based learning style model; and Latifah (2023) used student study style analysis for differential learning. From this analysis, it can be concluded that learning differentiation with learning styles can improve students' learning outcomes with high categories.

Then, in differentiation learning that was done before the learning process, the teacher should first pay attention to the learning needs of the student, one of which is the learning style, and then the expected results are very effective. Effective learning practices can be seen in the following components: (1) student learning outcomes, (2) student activities, and (3) student learning abilities (Anugraheni, 2018). Applications of differential learning require teachers to

vary and learn. The differentiation aspects, consisting of content, processes, products, and learning environments, give teachers the opportunity and ability to change them (Mariati et al., 2021). Teachers always facilitate students' needs by allowing them to communicate their opinions so that learning is effective, there is a comfortable atmosphere, and students feel happy. Diversity in facilitating students according to their learning styles is the best way to generate the information that students will acquire. Teachers can apply different learning strategies and use the right methods. De Petter and Hearchi (in Dariyani, 2022) displayed how to facilitate students' learning styles, meet the need to use visual learning styles, and maximize the use of images and materials on the board more often In order to encourage the students' audio learning style, teachers participate more actively when group discussions take place and ask students to read strongly. The students' kinesthetic learning style is demonstrated and more accurately predicted in person. After completing the learning process, students are divided into groups to see how effective the differentiation module is. The pretest and posttest results would be analyzed for each detail of the subject that the student has done. Then, it is calculated based on a normalized gain score according to Hake (1998) in Sari et al. (2021).

The results analyzed from the N-gain calculation showed a 0.7 and were included in the high category for learning differentiation by paying attention to the learning style. The teaching module differentiating was declared effective and very good.

A teacher is a figure who always gives comfort to students in their learning. In planning learning, this research deficiency does not include assessment when learning processes exist in every activity in the Worksheets. The researchers merely evaluate the results of pretests and posttests. Differential learning requires good planning through student learning monitoring and environments, observations, and surveys to identify student learning needs. Therefore, leaders in instructional learning should create a comfortable and supportive learning atmosphere so that students get the maximum learning opportunity.

CONCLUSION

Based on research done in class X. 4 State High School 3 Banyuasin III on learning style, it can be concluded that learning differentiation with learning styles can improve students' learning outcomes with high categories. Then, in differentiation learning that is done before the learning process, the teacher should first pay attention to the learning needs of the student, one of which is the learning style. Then, the expected results are very effective. Therefore, it is imperative that differential learning be developed by educators in order to facilitate the needs of diverse learning styles so that students can become active and comfortable participants in the learning process.

ACKNOWLEDGEMENT

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