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The Effect of Differentiated Learning on Creativity and Independent Learning of Class VIII Students in Bintan District

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Abstract

This research aims to determine the effect of differentiated learning on the creativity and learning independence of class VIII students in Bintan Regency. This research uses a quantitative method with a quasi-experimental design with a nonequivalent pretest and posttest control group design. The sample for this research was class VIII students of SMPN 2 Bintan as a sample of Driving Schools and SMPN 6 Bintan as a sample of Independent Curriculum Implementation Schools who were chosen randomly. Data was collected through creativity and learning independence questionnaires which were filled out by students before and after differentiated learning was implemented. Data were analyzed using the Manova parametric test if the data was normally distributed and the *Mann-Whitney* non-parametric test if the data was not normally distributed. Both tests were used to determine whether there were significant differences in the combination of dependent variables based on the nominal independent variable category. The research results showed that students' creativity and learning independence experienced significant differences after the implementation of differentiated learning, with a significance value of Asymp. (sig.) 0.000 in the experimental class. There was the highest increase in the indicator of fluent thinking of 7.4% in student creativity and the indicator "having self-confidence" of 12.7% in student learning independence. These results indicate that differentiated learning has a significant effect on students' creativity and learning independence. The data obtained broadly illustrates that differentiated learning can increase student creativity and learning independence in any type of school. The implication of this research is that differentiated learning can be used as an alternative learning approach to increase students' creativity and learning independence and has novelty value in the application of differentiated learning in schools.

Keywords: *Differentiated Learning, Creativity, Learning Independence*

Introduction

Education for a country is the basis for that country's development. The concept and thinking of education as an investment in human resources is increasingly rapid and developing in various countries. The vital role and function of education in understanding and positioning humans as the main force is a paradigm that every country must have (Hasan, 2020). Quality human resources can support economic growth and other growth in various sectors. Quality human resources are produced from the development of the education sector. The aim of National Education based on Law Number 20 of 2003 concerning the National Education System is to create Indonesian human resources who believe in and are devoted to God Almighty, have character, are intelligent, have noble character, are creative and independent so that they can compete with other countries (Septoyadi et al., 2021). Among the goals of National Education is to form creative and independent human resources. Students' creativity and independent

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learning still need to be familiarized and developed. Student creativity and independent learning can be actualized according to the needs and background of each student (Luthfi & Prayito, 2024).

Students' needs and backgrounds include the profile of students' learning styles, interests, talents and readiness to learn. Students' creativity and independent learning still need to be familiarized and developed. In the 2013 curriculum, efforts to get used to creative and independent thinking are an inseparable part of educational output, namely through improving 21st century skills (Pahrudin, 2019). In the Merdeka curriculum, efforts are made to get used to creative and independent thinking through implementing a project to strengthen the profile of Pancasila students in addition to formal learning in the classroom (Safitri et al., 2022). Student creativity and independence can be seen both during the learning process and as a product of learning. This cannot be separated from the teacher's efforts to teach students according to their different backgrounds and needs such as interests, learning styles and students' learning readiness (Purba et al., 2021).

The problem of student creativity and independent learning is also still a concern in Bintan Regency, Riau Islands Province. This is reflected in the results of a survey that the author conducted with 10 teachers from four different schools (namely SMPN 6 Bintan, SMPN 7 Bintan, SMPN 2 Bintan, and SMPN 19 Bintan) regarding student creativity and student learning independence. Responses to the survey showed that 50% of teachers said their students were less creative, 40% said they were average, and only 10% said they were very creative. Likewise, 50% of teachers surveyed stated that their students lacked independence, 40% stated that their students were average, and even 10% of teachers stated that their students were not independent. Regarding these problems, teachers stated the need for efforts to increase students' creativity and learning independence, including through the use of a variety of innovative learning and learning approaches that will provide students with opportunities to solve problems, express ideas, hone learning independence, increase enthusiasm for learning, and increase self-confidence. In other words, teachers realize the need for a learning approach that reduces teacher dominance in the learning process and gradually uses peer tutors and learning is carried out based on the uniqueness and needs of different students. An approach that is oriented to student needs is differentiated learning. The survey results provide information that student creativity and independence in these four schools is still low.

Needs such as interests, talents, learning style profiles, readiness and abilities of each student are different based on their parents' parenting patterns, innate character, and their social environment. A tiger has the ability to run more than 120 meters/second. cannot be compared and combined with monkeys which have the ability to climb trees quickly. Each different ability must be developed according to its portion. Ki Hajar Dewantara's philosophy teaches us to teach children according to their nature in achieving happiness and safety (Fitra, 2022). Teachers as facilitators and mentors must be able to direct students according to the students' abilities, interests, talents, readiness and learning profiles. Students who are used to observing reading cannot be equated with students who are used to learning by listening to someone's explanation. These differences are normal but must be paid attention to and facilitated. In reality, learning carried out at primary and secondary school levels is still oriented towards material completion and equalization of students' classical abilities and learning profiles and interests.

Students who are more active in learning tend to be marginalized and labeled as "naughty" students, in contrast to students who always write and read books who will definitely be labeled as smart students. However, it could be that students' activeness is their strength and their

learning style cannot be limited. The learning carried out by teachers in the classroom should be able to accommodate the different needs of each student. (Purba et al., 2021). A learning strategy that can accommodate students' needs but does not burden teachers is differentiated learning. Differentiated learning if analyzed according to Ki Hajar Dewantara's philosophy which emphasizes teachers teaching students according to their nature (Faiz et al., 2022). The important thing in differentiated learning is the teacher's ability to facilitate student learning according to their background, including learning profiles, interests, talents and learning readiness (Marlina et al., 2023). Marlina stated that the differentiated learning paradigm views all students as having their own uniqueness and must be facilitated according to their needs. Differentiated learning is a strategy and approach that can be implemented in classes using various learning models and methods (Marlina et al., 2023).

Previous research on differentiated learning focused more on analyzing learning outcomes and cognitive needs of students, Differentiated learning can help students get optimal learning outcomes (Herwina, 2021). Other research on differentiated learning can improve social arithmetic abilities (Rompis, 2023). According to Rompis, based on the results of his research, students' Social Arithmetic abilities can increase by 76-90% after carrying out differentiated learning through learning outcomes tests. Further research explains that differentiated learning can increase student interest and learning outcomes (Marlina et al., 2023).

With differentiated learning students' interest in learning increased by one point and the average learning outcomes through formative assessments and group work results increased by 19 and 16 points. There has been no research on differentiated learning that focuses on increasing students' creativity and learning independence. Students' creative and independent thinking is one of the expected products of National Education goals that can be actualized by students at every stage of their learning process. Armed with simple survey data about student creativity and learning independence in Bintan Regency and gaps in research that has not yet been carried out focused on the application of differentiated learning, motivating researchers to conduct research aimed at (1) analyzing the effect of differentiated learning on student creativity, and (2) analyzing the effect of differentiated learning on student learning independence.

Method

The research was conducted using a quantitative approach. The quantitative research strategy carried out is quasi-experimental, because the researcher will look for the influence of the treatment variable (independent variable) on the dependent variable in the original environment. The independent variable in this research is differentiated learning (X1), while the dependent variables are creativity (Y1) and student learning independence (Y2). The quasi-experimental research design used was nonequivalent pretest and posttest control group design (Wahyudin, 2020). In this research design, there are two groups, namely the treatment group and the control group which were selected without a random assignment procedure (Rukminingsih, 2020). The two groups were given the same pre-test and post-test, but only the experimental group was given treatment.

The population taken for this research were all students in class VIII of junior high schools which included driving schools and schools implementing the independent curriculum with changing independent choices in Bintan Regency. The number of schools driving the junior high school level in Bintan Regency consists of four junior high schools and schools implementing the independent curriculum change totaling six schools with varying numbers of students in each school. The sampling technique for this research is random sampling or samples taken at

random without prior grouping. The sample for this research was class VIII junior high school students at schools implementing the Merdeka Curriculum and Driving Schools in Bintan Regency. This sampling is related to the implementation of differentiated learning which is an inseparable part of the spirit of the Independent Curriculum. Differentiated learning has been implemented in Driving Schools and Schools with the Implementation of the Independent Curriculum with the Independent option to change.

Based on the results of a random draw by drawing all the names of the schools, SMPN 2 Bintan was selected as the representative of the Driving School and SMPN 6 Bintan as the representative of the Independent Curriculum Implementation school with the Independent Change option. The variables Creativity (Y1) and student learning independence (Y2) were measured using questionnaires filled out by students in both the control class and the experimental class. The questionnaire was compiled based on the creativity instrument developed by E. Paul Torrance (Abbasi et al., 2022) in the form of TCT (test of creative thinking) and the independence questionnaire developed by Listiani & Hidayati which was modified by the researcher according to the research objectives. Filling out the questionnaire was carried out before and after the differentiated learning process was carried out in the experimental class. Variables Y1 and Y2 are the questionnaire response values after deducting the response values before learning. The independent variable in this research is Differentiated Learning (X1). The experimental class was treated with the application of differentiated learning. Meanwhile, the control class was given classical learning (not differentiated learning) using lecture and demonstration methods.

The differentiated learning carried out focuses on differences in students' learning readiness in learning by grouping them based on the results of the initial assessment given by the teacher, with the division of not ready, ready and very ready to learn. The differentiated learning elements observed are the learning process and product elements. Learning content elements are not differentiated according to learning outcomes. After data collection, data analysis is carried out to test the hypothesis that has been formulated. However, previously an assumption fulfillment test was carried out, namely a homogeneity and normality test of the data. Next, hypothesis testing was carried out using the Multivariate Analysis of Variance (MANOVA) test if the data was normally distributed (Sutrisno et al., 2018) and using the non-parametric Mann-Whitney (Multivariate Sum rank) test if the data was not normally distributed. This analysis technique is used to determine whether there are significant differences in the combination of dependent variables based on nominal independent variable categories (Effendi.& Juita, F., 2024). To add reference to the discussion, observations were made of the implementation of differentiated learning and calculations of the percentage increase in indicators of student creativity and learning independence.

Results

After conducting research, data was obtained with descriptions as in table 1. Descriptive Data from Questionnaire Results.

Table 1. *Questionnaire Result Data for SMPN 2 Bintan and SMPN 6 Bintan*

School	Class	Gain Creativity	Gain Learning Independence
SMPN 2 Bintan	Experiment	4,72	4,86
	Control	-0,64	-0,86
SMPN 6 Bintan	Experiment	8,2	1,2
	Control	-0,73	-0,35

As can be seen from Table 1, there was an increase in students' creativity and independent learning scores after learning (posttest) at SMPN 2 Bintan as a driving school and SMPN 6 Bintan as a school implementing the Merdeka curriculum compared to the scores before learning (pretest). The data also shows that the pretest scores in the control class for the two dependent variables appear to be lower in the control class when compared to the experimental class. This indicates that students in the control class on average had lower creativity and independence than students in the experimental class, even before the experiment was carried out. Based on the descriptive data, it is continued with the homogeneity and normality test of the data which is depicted in table 2. Data Homogeneity Test.

Table 2. *Data Homogeneity Test for SMPN 2 Bintan and SMPN 6 Bintan*

Variable	*Levene statistics*	Sig.
Creativity	0,211	0,649
Learning Independence	3,535	0,068

The results of the homogeneity test on student creativity and independent learning at SMPN 2 Bintan and SMPN 6 Bintan obtained Sig. = 0.649 greater than Sig. > 0.05 for creativity, and 0.068 > 0.05 for student learning independence shows that the data is homogeneous. Followed by a data normality test with the results depicted in table 3 Creativity Normality Test.

Table 3. *Normality Test for Creativity Data at SMPN 2 Bintan & SMPN 6 Bintan*

School	Gain pretest-posttest	Statistics Shapiro wilk	df	Sig.
SMPN 2 Bintan	Gain (Experiment class)	0,946	22	0,262
	Gain (Control class)	0,463	22	0,000
SMPN 6 Bintan	Gain (Experiment class)	0,933	20	0,175
	Gain (Control class)	0,489	20	0,000

Table 3 presents the results of the normality test of students' creativity data at SMPN 2 Bintan and SMPN 6 Bintan using the Shapiro-Wilk test. At SMPN 2 Bintan, the experimental class obtained a significance value of 0.262 (> 0.05), indicating that the data were normally distributed, whereas the control class obtained a significance value of 0.000 (< 0.05), indicating that the data were not normally distributed. A similar pattern was observed at SMPN 6 Bintan, where the experimental class obtained a significance value of 0.175 (> 0.05), showing normal distribution, while the control class obtained a significance value of 0.000 (< 0.05), indicating a non-normal distribution. Therefore, it can be concluded that the creativity data of students in the experimental classes tend to follow a normal distribution, whereas in the control classes the data do not follow a normal distribution. Consequently, parametric tests should be applied for the experimental classes, while non-parametric tests are required for the control classes in the subsequent analysis. Furthermore, the results of the test data on the gain of learning independence for students at SMPN 2 Bintan and SMPN 6 are depicted in table 4. Normality test for student learning independence data.

Table 4. *Normality Test of Student Learning Independence Data*

School	Learning Independence	Statistik *Shapiro wilk*	df	Sig.
SMPN 2 Bintan	Gain (Experiment class)	0,959	22	0,688
	Gain (Control class)	0,752	22	0,000
SMPN 6 Bintan	Gain (Experiment class)	0,920	20	0,099
	Gain (Control class)	0,420	20	0,000

Data is said to be normally distributed if Sig > 0.05. Based on the normality test of the data on the gain of creativity and learning independence in the experimental class and the control class, it turns out that the data on the value of the gain on creativity and independence of students in the experimental class, both at SMPN 2 and at SMPN 6, has a value of Sig. > 0.05

which means normal distribution. However, for the control class, data on the value of students' creativity and independence gain in the experimental class, both at SMPN 2 and at SMPN 6, has a value of Sig. < 0.05 which means the data is not normally distributed. This can happen because this study is a quasi-experiment that does not allow random assignment of subjects to control and experimental groups, which often results in data that is not always normally distributed. Because the gain data in the control class is not normally distributed, the non-parametric Mann-Whitney test is used to make inferential statistical decisions.

After carrying out homogeneity and normality tests, the next step is to carry out inferential statistical tests to test hypotheses from the resulting data. Because the results of the posttest and pretest gain data normality tests contained data distribution that was not normally distributed, especially in the control class, the next hypothesis test was carried out using the non-parametric Mann-Whitney test. The Mann-Whitney non-parametric statistical test is a test used to compare the differences in medians of two unpaired groups when the data does not meet the assumption of normality (Effendi. & Juita, F., 2024). The Mann-Whitney test was carried out to see the comparison of students' creativity and independent learning scores in the experimental class that implemented differentiated learning and the control class. The Mann-Whitney test in research is a multivariate sum rank test which is an extension of the Mann Whitney test into multivariate space (Effendi & Juita, 2024). The results of the hypothesis test are depicted in table 5 Mann-Whitney Test Results for student creativity data.

Table 5. *Mann-Whitney test for SMPN 2 Bintan*

Creativity	Class	Sum of Ranks	*Mann-Whitney U*	Asymp. Sig (2-tailed)
Learning Independence	Experiment (Differentiated learning)	713.50	23.500	0,000
	Control	276.50		
	Experiment (Differentiated learning)	792.00	36.000	0,000
	Control	289.00		

In the Sum of Ranks column, it is shown that the average gain in creativity and learning independence for students in the experimental class is higher than in the control class. Based on Asymp. Sig (2-tailed) 0.000 < 0.05 shows that there is a significant difference in the creativity and learning independence of students in the experimental class and the control class so it can be concluded that: (1) differentiated learning significantly influences the creativity of class VIII students at SMPN 2 Bintan with a P-Value of 0.00, which means H0 is rejected and H1 is accepted. (2) differentiated learning significantly influences students' learning independence with a P-Value of 0.00, which means H0 is rejected or H1 is accepted. The results of the hypothesis test at SMPN 6 Bintan can be seen from the data in table 6. Results of the Mann-Whitney test at SMPN 6 Bintan.

Table 6. *Mann-Whitney Test for SMPN 6 Bintan*

Creativity	Class	Sum of Ranks	*Mann-Whitney U*	Asymp. Sig (2-tailed)
Learning Independence	Experiment (Differentiated learning)	576.00	74.000	0,000
	Control	327.00		
	Experiment (Differentiated learning)	475.00	36.000	0,000
	Control	345.00		

From the Sum of Ranks table, it can be seen that the average gain in creativity and learning independence in the experimental class which implemented differentiated learning was higher than in the control class. Asym. Sig 0.000 < 0.05 indicates that there is a significant difference in students' creativity and independent learning in the two classes. Based on this, it can be

interpreted as follows. (1) Differentiated learning significantly influences student creativity with a P Value of 0.00, which means H0 is rejected and H1 is accepted, and (2) Differentiated learning significantly influences student learning independence with a P Value of 0.00, which means H0 is rejected or H1 is accepted. The next step is to look at the percent increase in the average indicator of creativity and independence in student learning after being given differentiated learning treatment to become an additional reference in discussing the results of observations. Creativity indicators in the questionnaire include: Fluency, flexibility,originality, and elaboration. The calculation results of increasing indicators of student creativity and learning independence at SMPN 2 Bintan and SMPN 6 Bintan can be seen in the following table.

Table 7. *Percentage increase in Creativity indicators*

No	Indicator	SMPN 2 Bintan (% increase)	SMPN 6 Bintan (% increase)
1.	Fluency	7,4	3,5
2.	Flexibility	2,2	3,1
3.	Originality	0,06	0,6
4.	Elaboration	0,82	0,2

Based on the percent increase in creativity, it can be seen that the indicator of fluent thinking has increased more than other indicators. Fluency is a person's ability to express similar ideas in finding solutions to problems (Sari et.al., 2023). The calculation results show that differentiated learning can facilitate students to express similar ideas either with their group friends or with friends from other groups in solving problems. States that a person's ability to express ideas and find solutions to problems that occur is not easy for students who are unprepared for learning (Masruro, 2022). It takes a process and experience to grow it. One of the processes undertaken in differentiated learning is when students who are not ready to learn receive assistance and division of tasks according to their readiness, both from their teacher and from their peers, so that at the end of the lesson the student can experience an increase in their fluent thinking.

Table 8 *Percent increase in Student Learning Independence indicators*

No	Indicator	SMPN 2 Bintan (% Increase)	SMPN 6 Bintan (%Increase)
1.	Non-dependence on other people	0,3	2,3
2.	Have self-confidence	0,1	12,7
3.	Behave disciplined	0,9	11
4.	Have a sense of responsibility	7	7,5
5.	Behave on your own initiative	8	11,3
6.	Exercise self-control	0,35	4

Table 8 presents the percentage increase of students' learning independence indicators at SMPN 2 Bintan and SMPN 6 Bintan following the implementation of differentiated instruction. In general, SMPN 6 Bintan showed a higher increase compared to SMPN 2 Bintan, particularly in the indicators of self-confidence (12.7%), discipline (11%), and initiative (11.3%). Meanwhile, SMPN 2 Bintan exhibited lower increases across almost all indicators, although the responsibility indicator showed relatively similar results between the two schools (7% and 7.5%). These results indicate that the implementation of differentiated instruction has a positive impact on students' learning independence, especially in fostering stronger self-confidence, discipline, and initiative in schools that consistently apply the independent curriculum.

Discussion

Differentiated learning is a way for teachers to meet the diversity of students' needs during learning. Among these needs is students' readiness to face learning (Purba, 2021). In the differentiated learning process, students can study learning material according to their

respective abilities and needs so that students do not feel like they have failed in their learning (Purba et al., 2021). Through differentiated learning, students can increase their creativity and learning independence so that students experience learning comfortably and enjoyable.

The results of this research also need to be read with the awareness that it turns out that students in the control class, both at SMPN 2 and at SMPN 6, on average have lower creativity and independence than students in the experimental class. However, this fact does not reduce the statistical significance of the results considering that the creativity and independence variables analyzed are already gain data, which reflects changes in scores after compared to before learning. Based on the results of observations of the implementation of differentiated learning, teachers are able to facilitate students who are not ready to learn to learn together with colleagues who are ready to learn and very ready to learn. This is proven by the increasing ability of students to manage self-control, be able to take initiative, be disciplined and be responsible.

Apart from that, students who are very ready to learn with all their readiness undergo the learning process consistently and can improve their creative thinking abilities. The learning process he goes through leads to positive change. These two things are in accordance with the direction of Indonesian education policy which leads to positive change in accordance with Ki Hajar Dewantara's thoughts that education is oriented towards four perspectives, namely reason, spiritual, social and physical (Himmah et al., 2023). Santos in said, differentiated learning facilitates students to be more creative, increasing students' creative behavior in learning (Herwina, 2021). This is proven by research results which show that students' creative thinking behavior has increased for each student with different learning readiness. Several research results from experts related to differentiated learning provide information that differentiated learning can facilitate student creativity, reduce failure, facilitate learning based on adapting different skills, and can support regularity in changes in student behavior (Herwina, 2021). Other research from provides an illustration that differentiated learning can encourage students to self-organize in their learning (Gray, 2020) .

Differentiated learning also has an effect in increasing students' learning independence in indicators of initiative, self-control and responsibility. According to in his research, self-regulated learning or independent learning can improve students' academic abilities through peer guidance (Singaravelu, 2025). Students' ability to self-control in learning with peer guidance makes these students strengthen their goal-oriented learning behavior. The sense of responsibility seems to change when creating learning products in the form of experimental report displays that are tailored to students' readiness and tendencies in learning. In line with the research results, it was found that differentiated learning had an effect on increasing student learning independence in the indicators of initiative, self-control and responsibility.

Differentiated learning has a significant effect in increasing students' creativity and learning independence with differences in learning readiness. There are differences in creative thinking abilities such as fluent thinking, flexible thinking, elaborative thinking, and original thinking between students who are not ready to learn and students who are ready to learn, and between students who are not ready to learn and students who are very ready to learn. These differences lead to a positive direction in learning. The processes and products produced by students with differences in readiness are varied because they result from a student learning process that is comfortable and in accordance with their needs. Differentiated learning also has an effect in increasing students' learning independence in indicators of initiative, self-control and responsibility. This can also be seen from the results of the research conducted, that students

who are less prepared or even not ready when given a differentiation approach and given assistance from colleagues who are ready or even very ready to learn make the students' self-control, self-confidence and sense of responsibility increase. Students who are not ready to learn are in the group of students who are very ready to learn to be responsible in working on reports according to the things they master.

Guidance from colleagues and distribution of tasks according to their needs makes students ready and able to participate in learning. Students who are not ready to learn are in the group of students who are very ready to learn to be responsible in working on reports according to the things they master. Guidance from colleagues and distribution of tasks according to their needs makes students ready and able to participate in learning. The research results which show that differentiated learning has a significant effect on students' creativity and learning independence provide new input and information related to teachers' efforts to increase creativity, especially on students' creative thinking abilities and students' learning independence in learning which has been a problem.

This research is research that has novelty value, especially in the application of differentiated learning. In the past five years, much research has been carried out regarding the application of differentiated learning to improve students' cognitive learning outcomes, social arithmetic abilities, interests, learning motivation, facilitating creative behavior and students' metacognitive thinking. So the results of this research are something new which states that differentiated learning can increase students' creativity and learning independence and can be a reference for teachers, especially in Bintan Regency. The results of research with a sample of driving schools and schools implementing the independent curriculum in Bintan Regency can be generalized and confirmed that the application of differentiated learning is feasible in every school with any curriculum in an effort to increase student creativity and learning independence.

Even though the independent curriculum is one of the curricula that is the basis for the differentiated learning approach, based on this research, with curriculum management, learning design, processes and assessments that are in accordance with the principles of differentiated learning, differentiated learning becomes an alternative approach to be implemented in every type of school. The local limitations of this research in Bintan Regency are taken based on problems that arise in several schools, both driving schools, schools implementing the independent curriculum and schools with the 2013 curriculum in Bintan Regency regarding the low level of student creativity and learning independence. However, the results of the research can provide an illustration of the application of differentiated learning in all schools in Indonesia with conditions and culture appropriate to the region.

Conclusion

This study aims to describe the effect of differentiated learning on the creativity and independent learning of class VIII students in Bintan Regency, specifically in Driving Schools and schools implementing the Independent Curriculum. The results show that differentiated learning has a significant positive impact on students’ creativity and learning independence, as indicated by Mann-Whitney non-parametric analysis with Asymp. Sig 0.000 (< 0.05). In contrast, conventional learning methods do not significantly influence students’ creativity or independence in learning. The findings illustrate that students’ creativity and learning independence improve after the implementation of differentiated learning, especially in schools that consistently apply it across subjects with clear policy guidance and systematic teacher training.

The results imply that differentiated learning can be applied in various types of schools, from preschool to secondary school, as an effective alternative to enhance students' creativity, 21st-century skills, and character development. Despite its effectiveness, the study is limited to class VIII students in selected schools in Bintan Regency and does not examine other grade levels, subjects, or long-term effects, which may restrict the generalizability of the findings. Future research should explore the integration of differentiated learning with innovative approaches, such as deep learning, to further enhance students' skills and character according to the eight dimensions of the graduate profile, ensuring that differentiated learning continues to contribute to both academic and personal growth.

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