



The effectiveness of differentiated learning in Geography subject, anthroposphere material, for grade X at SMAN 4 Sidoarjo

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Abstract

Students play a crucial role in the learning process at school, creating a fun and engaging learning environment that can positively impact their interest and active participation. However, accommodating students' diverse learning styles and needs can be a challenge for teachers. To address this, differentiated learning activities are considered appropriate, as they focus on meeting students' individual needs and allow educators to respond effectively in the classroom. This study aims to assess the effectiveness of differentiated learning in improving the activity and learning outcomes of Grade X Geography students, specifically focusing on the Anthroposphere material at SMAN 4 Sidoarjo during the academic year 2022/2023. A one-shot case study experimental design was employed to investigate the effectiveness of differentiated learning. The study involved 40 students and utilized the one-shot case study model. The results revealed that implementing differentiated learning effectively improved the activity and learning outcomes of Grade X-C Geography students concerning the Anthroposphere material at SMAN 4 Sidoarjo during the academic year 2022/2023.

Keywords: *Differentiated learning; geography; anthroposphere.*

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INTRODUCTION

Students are one of the critical components in the learning process at school. Quality education should cater to the individual needs of each student, providing engaging and enjoyable learning activities (Al-Shehri, 2020; Dalila et al., 2022). This approach positively impacts the teaching and learning process in the classroom as students become actively involved (Wiranti, 2023; Magableh & Abdullah, 2020; Suprayogi et al., 2023). Recognizing the diversity among students is essential, considering their different cultural backgrounds, geographical conditions, and places of residence. Students possess unique characteristics, such as interests, talents, readiness, and learning styles (Stefani et al., 2023; Hidayati & Sujarwati, 2023; Simanjuntak et al., 2023). Consequently, appropriate teaching strategies are necessary to accommodate the diverse student body in each class.

Differentiated instruction is a method that addresses the diversity. According to Tomlinson (2001), differentiated instruction involves blending the differences among students in one class, gathering information and ideas, and allowing them to express what they have learned. This approach creates a diverse classroom environment that provides opportunities for students to acquire content ideas and improve their learning outcomes (Sitanggang et al., 2022; Anggraeny & Dewi, 2023; Liou et al., 2023; Pudjiati, 2023). Significantly, differentiated instruction does not burden students but aims to create a pleasant learning atmosphere tailored to each student's learning style.

Furthermore, it encourages students to take responsibility for their learning choices, appreciate diversity in the classroom, and adapt to their learning environment. For educators, differentiated instruction offers advantages as it enables a better understanding of students' needs and allows them to focus on essential teaching points, facilitating a deeper exploration of the subject matter (Kamila et al., 2023; Nisa et al., 2023). Educators can concentrate more on delivering the material to students. As quoted in Law No. 2 of 2003 on the National Education System, Article 36, paragraph 2 states, "The curriculum at all levels and types of education needs to be developed with the principle of differentiation according to educational units, regional potentials, and students." From this statement, it can be concluded that educational units are expected to develop and modify the curriculum according to the needs and conditions of each academic unit, as well as the characteristics of its students.

Previous research conducted by Wulandari et al. (2023) found that differentiated learning is currently effective in enhancing learning outcomes, fostering interest in learning, and increasing students' comfort in engaging in learning activities. In addition, differentiated learning also improves reading comprehension achievement (Magabeh & Abdullah, 2020), writing skills (Pudjiati, 2023), scientific literacy skills (Kamila et al., 2023), critical thinking (Al Shehri, 2020), and learning outcome and satisfaction (Liou, et al., 2022; Hidayati & Sujarwati, 2023; Stefani et al., 2023; Dalila et al., 2022). However, most empirical proof justifies the findings without any local context attachment, especially integrating and implementing the contents in the curriculum. Therefore, this study aims to examine the

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effectiveness of differentiated learning in improving the activity and learning outcomes of Grade X Geography students in grade X at SMAN 4 Sidoarjo.

METHOD

This study employs an experimental research design with a quantitative descriptive approach. According to Sugiyono (2013), there are various experimental techniques, including pre-experimental (non-design), true experiment, factorial experiment, and quasi-experiment. For this study, the researcher opts for the pre-experimental research method. The pre-experimental research design encompasses a one-shot case study, one-group pretest-posttest design, and intact-group comparison. Specifically, this study adopts a one-shot case study design, where the research subjects undergo a pretest before receiving treatment. Subsequently, after the activity, the research subjects are given a posttest to assess their response to the learning material. The research subjects in this study pertain to individuals or groups that constitute the population and sample in a research investigation. Purposive sampling is employed as the sampling technique, which entails selecting the sample based on specific considerations (Sugiyono, 2013). The total number of students in grade X amounts to 480 students, spanning classes X-A to X-L. One class of 40 students is chosen as the sample from this population, namely class X-C of SMA Negeri 4 Sidoarjo. The researcher collects quantitative data through post-test result sheets and closed-ended questionnaires administered to the students, employing a Likert scale.

RESULTS AND DISCUSSION

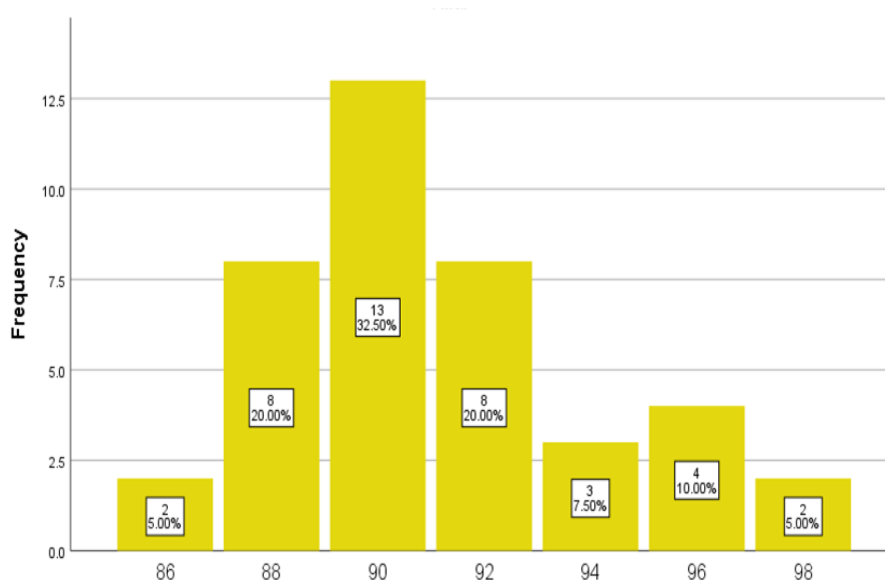


Figure 1. Bar chart of post-test result

Differentiated learning is one of the effective teaching strategies today in improving learning outcomes and is one of the supporting factors for the success of students in learning activities

(Liou et al., 2022; Hidayati & Sujarwati, 2023; Stefani et al., 2023; Dalila et al., 2022). The improvement in student learning outcomes in this study can be seen in Figure 1. and Table 1.

Table 1. The data on students' learning outcomes and frequency of achievement

Description	Frequency (students)
The lower limit of values: 86-88	10 Students
Midpoint of values: 89-91	13 Students
The upper limit of values: 92+	17 Students

The results of research carried out on 40 students using a one-shot case model study, among others, a number of 2 students got a score of 86, a number of 8 students got a score of 88, 13 students got a score of 90, 8 students earned a score of 92, 3 students got a score of 94, 4 students got a score of 96, and 2 students got a score of 98 where the lower limit of 86 was applied, with a class average of 91.1. With a high average class score, it shows that there is an increase in student learning outcomes. This result supports the empirical that explicitly differentiated learning improves learning outcomes (Liou et al., 2022; Hidayati & Sujarwati, 2023; Stefani et al., 2023; Dalila et al., 2022). Differentiated learning is a particular method used by educators to fulfill the needs and desires of students. Educators do not have to apply different learning models to several students in this differentiated learning. It also means not adding questions to students who solve them efficiently in a shorter time than other students.

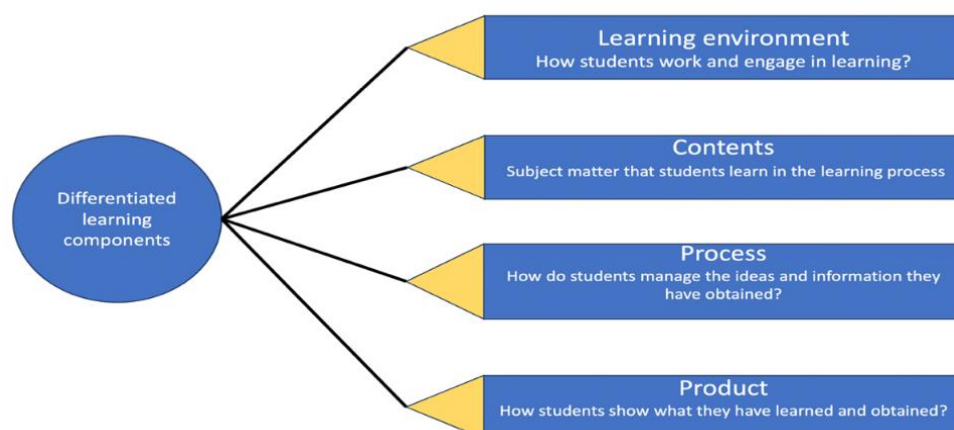


Figure 2. Differentiated learning components

This differentiated learning also does not need to make classifications regarding groups of students where brilliant students are grouped with other intelligent students, students who are less clever with those who are less competent and vice versa, and implementing different tasks for each student in the class. Differentiated learning applies equality in the learning process. Differentiated learning is based on the idea that not all students have the same capacity to

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perceive and digest the information educators provide. According to Marlina (2019), there are four different components in learning, including process, product, content, and learning environment. For details about these four components, you can see them in Figure 2.

The following explains the components of differentiated learning: 1) The learning environment is how students work and experience learning with different learning. Diverse learning is learning that considers individual differences and students' needs (Al Shehri, 2020; Wiranti et al., 2023). 2) Content. It includes what students learn, such as curriculum and teaching materials. In this case, educators adapt the curriculum and learning materials to students' learning styles and weaknesses (Simanjuntak et al., 2023; Magableh & Abdullah, 2020). 3) Process. It is about how students process ideas and information. How students interact with the material and whether these interactions are part of their learning choices (Suprayogi et al., 2023; Anggraeny & Dewi, 2023). Gregory & Chapman (2018) stated that the learning process is controlled by how to activate learning, learning activities, and products (in the form of what is produced by how students express what they have learned). Learning products enable educators to assess student learning and provide follow-up materials. A student's learning style also determines the learning outcomes communicated to educators (Pudjiati et al., 2023; Kamila et al., 2023).

CONCLUSION

The results of quantitative research using One Shoot Case Study on the effectiveness of differentiated learning in the geography subject, Anthroposphere material for the class, show the effectiveness of differentiated learning for students. Four components affect the success of the implementation: learning environment, content materials, learning process, and learning product. This finding indicates that differentiated learning is an effective learning strategy in Anthroposphere material in high schools. This study could be relevant for the same level of education and *vice versa*. Thus, more studies need to be conducted primarily in differentiated learning related to learning motivation and student intention.

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