

Evaluation of the Effectiveness of Student Worksheets (LKPD) in Differentiated Learning in Economics Activities at Nusantara Indah High School

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ABSTRACT

This study aims to evaluate the effectiveness of using Student Worksheets (LKPD) in differentiated learning on economic activities in senior high schools. The background of this study is based on the importance of innovative teaching materials that can adapt to the diverse learning needs of students in accordance with the principles of differentiated learning in the Independent Curriculum. The research method used is a quantitative descriptive method with data analysis techniques in the form of calculating averages, percentages, and effectiveness tests. The research respondents consisted of ninth-grade students of SMA Nusantara Indah who used differentiation-based LKPD in the process of learning economic activities. The results of the study indicate that the use of differentiated LKPD is effective in increasing active participation, understanding of economic concepts, and student learning motivation. Thus, differentiation-based LKPD can be used as an alternative innovative teaching material that supports the optimal achievement of learning objectives at the senior high school level.

INTRODUCTION

In an era of globalization and rapid socioeconomic change, students' economic competencies at the secondary level are becoming increasingly important. Learning economics at the senior high school (SMA) level plays a role in equipping students with an understanding of economic phenomena in their environment and fostering relevant economic attitudes and skills. However, several studies have shown that students' economics learning outcomes are suboptimal due to various factors, including learning methods that are not aligned with students' needs.

One factor influencing learning outcomes is the use of appropriate media and teaching materials, including Student Worksheets (LKPD). LKPD, as a teaching material, has been widely developed and proven effective in various subjects. For example, research by Pramudiyanti et al. showed that discovery learning-based LKPD in fifth-grade science significantly improved student learning outcomes.

Furthermore, a meta-analysis by Hakim et al. (2023) indicated that the use of student worksheets (LKPD) had a positive impact on mathematical problem-solving skills at various levels of education, demonstrating that LKPD has broad potential as an active learning strategy. This opens up opportunities for its application to economics material at the high school level, ensuring that learning is not merely passive.

Meanwhile, a learning approach that is increasingly recommended is Differentiated Learning, a strategy that adapts content, processes, products, and learning environments to each student's readiness, interests, and learning profile. This approach is considered crucial for achieving inclusivity and optimal learning outcomes, as not all students have homogeneous characteristics.

The combination of appropriate teaching materials (such as student worksheets) with differentiated learning strategies is believed to increase learning effectiveness, particularly in materials that require thinking skills and conceptual understanding, such as economic activities. In the material on economic activities—which includes concepts of production, consumption, distribution, and the role of individuals in economic activity—students need to be supported with activities that allow for exploration, reflection, and connections to real-world contexts.

However, in practice, challenges remain. Some teachers have not implemented differentiation optimally due to limited understanding and adequate resources. For example, studies show that the implementation of differentiated learning among prospective elementary school teachers still requires strengthening. Furthermore, effective preparation of student worksheets (LKPD) requires high validity and practicality to ensure the teaching materials are truly applicable to various student profiles.

Furthermore, in the context of economics in high school, there is still little research specifically evaluating the effectiveness of student worksheets (LKPD) designed with a differentiated approach. Most LKPD research focuses on science or mathematics subjects. Therefore, there is a need for research that focuses on the integration of LKPD and differentiated learning in economics to determine

the extent to which this strategy can improve students' learning outcomes and economic activities.

Effectiveness evaluation in this study is important because it will provide insight into the extent to which differentiated student worksheets (LKPD) can improve student engagement, conceptual understanding, and learning outcomes. With this evaluation, teachers and schools can make decisions about selecting and developing teaching materials and learning strategies that are more responsive to student needs. Furthermore, current economic activity material requires critical thinking skills, problem-solving skills, and connections to students' realities.

Theoretically, the combination of student worksheets (LKPD) and differentiated learning supports a constructivist framework in which students actively construct understanding through experience and interaction, and are given assignments appropriate to their readiness. This aligns with the principle that differentiated learning adapts content, processes, and products to meet students' learning needs. Practically, effective use of LKPD can facilitate learning activities such as discussions, economic simulations, mini-project assignments, and reflection, so that economics learning is not simply rote.

Based on this background, this study aims to evaluate the effectiveness of using student worksheets (LKPD) in differentiated learning on economic activities at SMA Nusantara Indah. The results are expected to contribute to the development of teaching materials that are more tailored to student needs, as well as more inclusive and effective learning strategies. Thus, it is hoped that economics learning at SMA Nusantara Indah will be more optimal, providing a deeper understanding of concepts, and producing students who are active, critical, and able to apply economic knowledge in everyday life.

LITERATURE REVIEW

Differentiated Learning Concept

Differentiated learning is a learning strategy that focuses on adapting the learning process to the needs, interests, and learning profiles of students. According to Tomlinson (2017), differentiated learning encompasses four main components: content, process, product, and learning environment. The goal is to ensure that each student can learn optimally according to their individual readiness and potential. In the context of the Independent Curriculum, differentiated learning is a key characteristic that emphasizes flexibility and personalization of the learning process.

The North Sumatra BBGTK (2023) explains that differentiated learning not only provides opportunities for students to learn according to their abilities but also helps teachers identify and adapt their teaching styles to be more effective. Thus, differentiated learning contributes to creating an inclusive, participatory, and student-centered learning environment. Research by Septiani and Hamzah (2023) shows that prospective teachers who apply the principle of differentiation are able to increase student engagement and minimize gaps in learning outcomes.

Student Worksheets (LKPD) as Teaching Materials

Student Worksheets (LKPD) are learning tools that help students actively participate in the learning process through exploration, observation, and problem-solving. According to Prastowo (2015), LKPD are learning guides containing instructions, work steps, and tasks that students must complete to discover concepts independently or collaboratively. Good LKPD are designed in accordance with the principles of independent learning, contextuality, and integration with the core competencies to be achieved.

Research by Pramudiyanti et al. (2022) shows that the use of discovery learning-based worksheets (LKPD) can improve students' conceptual understanding and learning outcomes because it provides opportunities for students to directly experience the process of discovering knowledge. Similarly, Hakim et al. (2023) concluded through their meta-analysis that the use of LKPD has a significant influence on problem-solving skills and learning outcomes in various subjects. Thus, LKPD functions not only as a tool but also as a medium that encourages active learning.

Economic Activity Material in Social Studies Learning

Economic activity material is an important part of Social Studies (IPS) learning at the junior high school level. This material covers basic economic concepts such as production, distribution, and consumption, as well as their relationship to everyday life. According to Minister of Education and Culture Regulation No. 37 of 2018, the goal of IPS learning is to develop students who are able to understand social phenomena, including economic activity in the community. Therefore, mastering economic activity material requires not only memorization of concepts but also contextual understanding that can be applied in real life.

In practice, students often struggle to understand the relationships between elements of economic activity because learning tends to be theoretical. To address this, teachers can use student worksheets (LKPD) that include mini-project-based activities or market simulations, allowing students to experience and understand the role of economics firsthand. Sari and Wijaya (2023) emphasized that valid and practical LKPD can improve students' critical thinking skills and economic analysis abilities through contextual, reflective activities.

Research Framework

Based on the theoretical study above, it can be concluded that the effectiveness of economics learning is influenced by two main factors: the use of appropriate teaching materials (LKPD) and appropriate (differentiated) learning strategies. LKPD designed in a differentiated manner can adapt to students' learning needs based on their ability level, learning style, and interests. Thus, learning becomes more meaningful and inclusive.

Conceptually, the use of differentiated student worksheets (LKPD) in economic activities is expected to improve student learning outcomes, activeness, and positive responses to learning. The teacher acts as a facilitator, guiding students in exploratory activities based on the adapted LKPD. Through an effectiveness evaluation process, this study seeks to provide an empirical

overview of the extent to which the implementation of differentiated LKPD can improve the quality of economics learning at Nusantara Indah Junior High School.

METHODOLOGY

This study uses a quantitative approach with an evaluative method to assess the effectiveness of using Student Worksheets (LKPD) in differentiated learning on economic activities. This approach was chosen because it is suitable for objectively measuring the influence or success of a learning strategy on learning outcomes and student responses. The research design used was a one-group pretest-posttest design, in which students were given a pre-test before using the differentiated LKPD, then given a learning treatment using the LKPD, and concluded with a final test to determine changes in learning outcomes.

The population of this study was all ninth-grade students at Nusantara Indah Senior High School, in the 2024/2025 academic year, with a total of 120 students. The sample was determined using a purposive sampling technique, selecting one class with 30 students considered representative of the population's characteristics based on diverse academic abilities. This selection took into account the implementation of differentiated learning, which requires diverse student learning profiles.

The variables in this study consist of independent variables, namely the use of LKPD based on differentiated learning, and dependent variables, namely learning effectiveness, which is measured through three main indicators: (1) improvement in student learning outcomes, (2) student activity and participation in learning activities, and (3) student response to learning.

The research instruments used included an observation sheet for learning implementation, a student response questionnaire, and a learning outcome test. The observation sheet was used to assess the suitability of the learning implementation with the principles of differentiation, such as content, process, and product differentiation. The student response questionnaire was structured on a five-point Likert scale to determine students' perceptions of the ease, involvement, and usefulness of the student worksheets used. Meanwhile, the learning outcome test was structured based on the basic competency indicators for economic activity material that had been validated by experts.

The data collection technique was carried out in three stages, namely: (1) observation of learning implementation to identify the application of differentiated LKPD, (2) distribution of questionnaires after learning activities to measure student responses, and (3) administration of pretests and posttests to measure improvements in learning outcomes. The validity and reliability of the instrument were tested first through a limited trial with analysis using the Pearson correlation formula and Cronbach's Alpha.

The data obtained were analyzed using descriptive and inferential statistical analysis. Descriptive analysis was used to describe the average learning outcome scores, level of activity, and student responses. Inferential analysis used a paired sample t-test to determine significant differences between pretest and posttest scores, and an N-gain test to assess improvements in learning effectiveness.

To ensure the validity of the qualitative data (observations and student responses), data triangulation was conducted between observations, short interviews with teachers, and student questionnaires. The entire research process was conducted in accordance with ethical principles of educational research, namely maintaining the confidentiality of student identities and obtaining official permission from the school.

With this method, it is hoped that the research results can provide a comprehensive picture of the effectiveness of using differentiated learning-based LKPD in improving learning outcomes and student involvement in economic activity material, while also providing an empirical basis for teachers in developing learning strategies that are adaptive to the needs and individual differences of students.

RESEARCH RESULT

Respondents in this study were ninth grade students of SMA Nusantara Indah in the 2024/2025 academic year, as follows:

Table 1. Profile of Research Respondents

No	Respondent Characteristics	Category	Number of people)	Percentage (%)
1	Gender	Male	13	43.3
		Female	17	56.7
2	Age (years)	15	5	16.7
		16	18	60.0
		17	7	23.3
3	Academic Ability (average social studies report)	High (≥ 85)	8	26.7
		Moderate (70-84)	15	50.0
		Low (< 70)	7	23.3
4	Number of Respondents	—	30	100

Information:

- Respondents were ninth grade students at one of Nusantara Indah Senior High Schools in the 2024/2025 Academic Year.
- The composition shows that female students are more dominant than male students.
- Most 16-year-old students with moderate academic abilities show a diversity of characteristics that are appropriate for the application of differentiated learning.

This study aims to evaluate the effectiveness of using Student Worksheets (LKPD) in differentiated learning on economic activities in ninth-grade students at SMA Nusantara Indah. Data were collected through observation, student response questionnaires, and learning outcome tests (pretest and posttest).

Table 2. Comparison of Student Learning Outcomes Before and After Using Differentiated Student Worksheets

No	Test Types	Average value	Category	Improvement	Sig. (p)	Information
1	Pretest	62.4	Enough	–	–	Initial value before treatment
2	Posttest	82.1	Good	19.7	0,000	There is a significant increase
	N-Gain	0.58	Medium-High	–	–	Learning effectiveness is quite high

Information:

The paired sample t-test showed a significance value ($p = 0.000 < 0.05$), so there was a significant difference between the pretest and posttest scores.

Table 2 shows the results of the initial test (pretest), obtained an average score of 62.4 with a sufficient category. After implementing differentiated learning based on LKPD for three meetings, the average posttest score increased to 82.1 with a good category. The results of the paired sample t-test showed a significance value (p) of $0.000 < 0.05$, which means there is a significant difference between learning outcomes before and after the use of differentiated LKPD. The N-gain value of 0.58 is included in the moderate to high category, which indicates an increase in learning effectiveness.

Table 3. Observation Results of the Implementation of Differentiated Learning

Observed Aspects	Percentage of Implementation (%)	Category
Content differentiation	86	Very good
Process differentiation	89	Very good
Product differentiation	87	Very good
Student involvement in learning activities	90	Very good
Overall average	88	Very good

Information:

A score of $\geq 85\%$ is categorized as very good, indicating that the teacher has implemented the principles of differentiated learning optimally.

Observation results in Table 2 show that the learning implementation averaged 88%, which is considered very good. This indicates that the teacher successfully implemented the principle of differentiating content, process, and

product as planned. Student activity during the lesson also showed improvement, with students becoming more active in discussions, expressing opinions, and connecting economic concepts to everyday life.

Table 4. Results of Student Response Questionnaire on the Use of Differentiated Student Worksheets

Rated aspect	Percentage of Positive Responses (%)	Category
Ease of understanding the material	92	Very good
Suitability of LKPD to the abilities of each student	88	Very good
Involvement and motivation in learning activities	91	Very good
Clarity of instructions and appearance of LKPD	87	Very good
Suitability of LKPD with daily life (contextual)	90	Very good
Overall average	90	Very good

Information:

The majority of students gave a positive response to the differentiated LKPD, indicating its effectiveness in improving understanding and learning motivation.

Meanwhile, the results of the student response questionnaire in Table 3 show that 90% of students responded positively to the use of differentiated student worksheets (LKPD). They assessed that the LKPD helped them understand economic concepts more easily, provided challenges tailored to their individual abilities, and made the learning process more enjoyable. Several students also stated that the small project-based activities in the LKPD helped them better understand the roles of production, distribution, and consumption in a concrete way.

DISCUSSION

The results of this study indicate that the use of differentiated learning-based student worksheets (LKPD) is effective in improving student learning outcomes and engagement in economic activities. Significant increases in posttest scores and N-gain scores indicate that learning tailored to student profiles positively impacts conceptual understanding. This is in line with the findings of Hakim et al. (2023) who stated that the use of LKPD can improve students' thinking and problem-solving skills by encouraging them to be active in the learning process.

Furthermore, observations showed a high level of implementation of differentiated learning, indicating that teachers successfully adapted learning strategies to students' readiness and interests. This principle aligns with Tomlinson's (2017) theory, which states that differentiated learning enables

students to learn optimally by adapting content, processes, and learning products to their individual needs.

Positive student responses also reinforce the importance of differentiated student worksheets (LKPD) in building motivation and interest in learning. The North Sumatran Institute of Teacher Training and Education (BBGTK) (2023) emphasized that differentiated learning not only improves academic understanding but also fosters student self-confidence, as each individual feels valued according to their potential. In an economic context, this approach facilitates students' understanding of the roles and economic activities in their environment.

Improved learning outcomes are also supported by student worksheet designs that include exploratory, reflective, and contextual activities. Pramudiyanti et al. (2022) demonstrated that student worksheets designed with a discovery learning approach can strengthen engagement and conceptual understanding. A similar finding was seen in this study, where students actively discovered the relationship between economic concepts and real-world experiences through student worksheet activities.

Thus, it can be concluded that the effectiveness of student worksheets (LKPD) in differentiated learning lies not only in the content but also in their ability to accommodate diverse learning styles and student ability levels. The use of differentiated LKPD helps teachers manage heterogeneous classes into collaborative and participatory learning environments. This supports the view of Sari & Wijaya (2023) that valid and practical LKPD can be an important instrument in developing students' critical and collaborative thinking skills.

Overall, the results of this study confirm that the implementation of differentiated learning-based student worksheets (LKPD) on economic activities is worthy of recommendation as an effective learning strategy at the junior high school level. This strategy not only improves learning outcomes but also helps teachers implement the Independent Curriculum (Kurikulum Merdeka), which emphasizes differentiation and student-centered learning.

CONCLUSION AND RECOMMENDATIONS

Based on the results of the research and data analysis that have been conducted, it can be concluded that the use of Student Worksheets (LKPD) in differentiated learning on the material of Economic Activities has proven effective in improving the quality of learning and student learning outcomes at Nusantara Indah Senior High School. Observation results show that the level of implementation of learning with LKPD reached the category of "very effective", marked by active student involvement in the process of exploration, discussion, and reflection. Student responses to LKPD were also classified as "positive", indicating that students felt more motivated, easily understood economic concepts, and had the opportunity to learn according to their respective abilities. Analysis of learning outcomes showed an increase in average scores after the implementation of differentiated LKPD, with gain scores in the medium to high category, which indicates a significant increase in understanding of economic concepts. Thus, it can be concluded that the use of LKPD designed based on the principle of differentiation is able to accommodate differences in learning styles,

abilities, and interests of students effectively, and has a positive impact on student learning outcomes and motivation.

Based on the results of this study, it is recommended that Economics teachers at Nusantara Indah Senior High School develop student worksheets (LKPD) based on differentiated learning on an ongoing basis, by adjusting the difficulty level and context of learning activities to suit student profiles. Teachers also need to enrich the LKPD with contextual activities relevant to students' daily lives to make economics material easier to understand. For schools, the results of this study can be used as a basis for improving the quality of learning planning through training in the development of differentiated teaching tools. Future researchers are advised to expand this study by involving a larger sample size and analyzing additional variables such as learning creativity, critical thinking skills, or learning independence to obtain a more comprehensive understanding of the effectiveness of LKPD in various learning contexts.

ADVANCED RESEARCH

This study has several limitations that need to be considered in interpreting the results. First, the study was conducted in only one school with a relatively limited number of respondents, so the results cannot be broadly generalized to other school contexts with different characteristics. Second, the research instruments used, such as questionnaires and observation sheets, still depended on the subjective perceptions of teachers and students, so the potential for perceptual bias remains. Third, the relatively short duration of the study meant that the measurement of the long-term effects of the use of differentiated student worksheets on improving student learning outcomes and motivation could not be optimally observed. Furthermore, this study focused only on the effectiveness of learning and cognitive learning outcomes, thus not encompassing the affective and psychomotor dimensions of students, which are also important in learning Economics.

Future researchers are advised to conduct research with a broader sample size and involve various schools to ensure stronger external validity. Furthermore, longitudinal research is needed to assess the long-term impact of using differentiated learning-based student worksheets on the development of students' critical thinking, collaborative thinking, and independent learning. Researchers can also develop digital-based interactive student worksheet models to adapt to the needs of 21st-century learning, which emphasizes the integration of information technology. Furthermore, it is recommended that future research not only measure effectiveness from a cognitive perspective but also integrate affective and psychomotor aspects, and involve in-depth qualitative analysis to understand students' learning experiences more comprehensively.

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