



THE NEEDS FOR DEVELOPING LKPD BASED ON DIFFERENTIATION LEARNING TO INCREASE INTEREST AND LEARNING RESULTS

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Abstract

Media development in learning needs to be done to achieve learning objectives. This research aims to analyze the need for developing LKPD media based on differentiated learning to increase interest and learning outcomes in Biology. The need to develop LKPD based on differentiated learning is an effort to overcome the problem of interest and learning outcomes in Biology which are still low among Phase E students. SMA Negeri 19 Tebo. The research method was carried out quantitatively from the results of filling in the instrument through several stages, namely observation, articles review, preparation of instruments, filling in the instrument, and data tabulation. The subjects of this needs analysis were all 27 Phase E students of SMA Negeri 19 Tebo. The result of this need analysis showed that the development of LKPD based on differentiated learning was needed to increase the interest and learning outcomes in Biology for SMA Negeri 19 Tebo students. The limitation of this LKPD development needs analysis was the limited number of research samples.

Keywords: LKPD, differentiated learning, interest in learning, learning outcomes

INTRODUCTION

A developed nation is characterized by progress in education which is influenced by the quality of education itself. The increasingly rapid development of science and technology demands that the world of education must improve the quality of its education (Surata et al., 2020). The quality of education is influenced by various things, one of them is the curriculum. The quality of learning can be said to be good if the learning process is centered on student activities (student-centered learning) and not teacher-centered learning (Jayawardana & Gita, 2020).

Teachers should act as facilitators while students are the main subjects in learning activities in the learning process. Schools as educational institutions have their respective

advantages and disadvantages in influencing the quality of education. Quality schools are influenced by several factors, including teacher teaching performance and the use of learning resources (Puspa et al., 2021).

The very rapid development of the times demands an increase in teacher competence in the field of ICT. Teachers must be able to utilize technology to be able to present a learning process that provides space for students to be able to explore, making easier interaction between students and teachers (Suwastini et al., 2022). The learning process can be carried out well if it is planned well.

To make learning easier to achieve learning objectives, teachers should use approaches, strategies, methods, models, or media in the learning process (Feladi et al., 2023; Syaifullah et

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al., 2024; Nasution et al., 2024; Sofa et al., 2023; Arpan et al., 2022). One thing that can be used to achieve these learning objectives is the use of student worksheets (LKPD).

LKPD is a collection of sheets containing student activities that enable students to carry out real activities with the objects and problems being studied (Suwastini et al., 2022). LKPD is used in the learning process in class, outside the classroom, and at home. The LKPD contains a student study guide and contains several practice questions to evaluate learning outcomes and reflect on the learning process carried out.

LKPD can be made interesting according to students' preferences. One way to arouse students' interest in learning and improve their process skills is by using LKPD which are developed or designed by the teachers themselves (Aldiyah & Evy, 2021). This is intended by teachers to make their LKPD so that the LKPD is prepared following the students' background conditions and students' needs with adjustments to the students' conditions that can be known directly.

The adjustments in question are related to students' interests, learning profiles, and readiness to achieve increased learning outcomes (Wahyuni, 2022). Teachers can apply differentiated learning to facilitate students according to their backgrounds and needs. This makes teachers understand more about the learning process carried out with different student conditions.

The differentiated approach consists of three aspects, namely content differentiation, process differentiation, and product differentiation. Content differentiation includes what students learn. Content relates to curriculum and learning materials. Process differentiation is the student's way of processing ideas and information. Product differentiation, namely how students show what they have learned (Wahyuni, 2022).

The implementation of the Biology learning process at SMA Negeri 19 Tebo still experiences many obstacles, for example, students' low interest in learning. This low interest in learning is caused by several things, including Biology lesson material which uses a lot of scientific names that are difficult to memorize and the LKPD used is the LKPD

which is given the same to all students without paying attention to the students' background and needs and is not yet based on differentiated learning.

Interest is one of the factors that influence learning outcomes (Friantini & Winata, 2019). Because interest is related to learning outcomes, teachers should pay more attention to students' learning interests. The quality of student learning outcomes depends on the learning process carried out (Jayawardana & Gita, 2020). One of the interesting learning processes can be carried out by using appropriate teaching media, such as LKPD media to achieve learning outcomes that follow learning objectives.

The abilities that a person obtains after going through learning activities are called learning outcomes (Nurlia et al, 2017). Learning outcomes are influenced by various factors, namely internal factors and external factors. Internal factors include thinking abilities or intellectual behavior, motivation, interest, and readiness of students, both physically and spiritually. Meanwhile, external factors include facilities and infrastructure, teacher competence, teacher creativity, learning resources, environmental, family, and environmental methods and support (Nurlia et al, 2017).

Learning outcomes are one indicator of achieving learning goals. If education faces the problem of students' low interest in learning, then this condition will hinder the achievement of learning goals, namely to achieve cognitive, affective, and psychomotor changes in themselves. For this reason, this needs analysis is designed to develop LKPD based on differentiated learning to increase student interest and learning outcomes in Phase E SMA Negeri 19 Tebo.

METHOD

This type of research was descriptive research carried out using quantitative methods. Data analysis used numbers taken from the results of instruments distributed to students as samples. The quantitative data instrument used survey techniques starting with observations of Phase E students in SMA Negeri 19 Tebo. This needs analysis used quantitative methods to find out how big the need for LKPD development is.

This quantitative method was an appropriate research method to analyze the need

for developing LKPD based on differentiated learning to increase interest and learning outcomes in Biology Phase E students at SMA Negeri 19 Tebo and can later be used for further research purposes using the ADDIE development model. The research to be analyzed must be by the research objectives and methodology, so the inclusion criteria are determined by the researcher.

The following criteria were used to identify research to be included in the needs analysis, with the following criteria: 1) The research study focused on Phase E students, Biology learning participants using the Merdeka Curriculum, 2) The research stated that the need for developing LKPD based on differentiated learning was carried out to increase interest and learning outcomes in Biology for Phase E students at SMA Negeri 19 Tebo, 3) Instrument preparation. The instrument was prepared based on research objectives including variables of student perception of LKPD, differentiated learning, interest in learning, and learning outcomes as well as student perceptions of LKPD development. The instrument presented consists of 33 statement items. The instrument is filled in directly manually by students as respondents. The preparation of this instrument was carried out after research observations and journal reviews. Observations and interviews were carried out in September-October in SMA Negeri 19 Tebo, and 4) Collection of instrument filling results. The instruments that the students have filled out are then collected by the researcher and tabulated. Statistical data from respondents is tabulated so that it can be interpreted as a whole. For all calculations in data analysis, the Microsoft Excel 2010 program was used.

RESULTS AND DISCUSSION

This research was conducted to analyze the need for the development of LKPD based on differentiated learning to increase interest and learning outcomes in Biology Phase E students at SMA Negeri 19 Tebo. For this reason, a description of the research data related to 27 samples of students in one class who succeeded in becoming research samples that met the criteria was outlined.

Table 1 Criteria for Students as Research Samples Based on School Background

School	Total	Percentage
SMP	25	98%
MTs	2	2%
Summary	27	100%

Table 1 showed that most of the students' previous educational background was junior high school which can be used as a basis for implementing learning which is carried out with the perception that some of the junior high school students have already used LKPD in learning. Meanwhile, students from MTs need to improve their understanding of the use of LKPD media in learning. Phase E students who meet the requirements as samples who apply LKPD media based on differentiated learning are in one class.

Furthermore, the sample criteria are in accordance with the needs analysis sample criteria which are divided into five criteria for students' understanding of the needs analysis for learning media development which can be explained in Table 2.

Table 2 Research Sample Understanding Criteria for Analysis of LKPD Development Needs

Analysis of LKPD Development Needs	Scale
Interest in LKPD	77
Interest in differentiated learning	77
Perception of interest	82
Perception of learning outcomes	83
Perceptions of the development of LKPD based on differentiated learning for increase interests and learning outcomes	77

Table 2 showed that the data on LKPD development needs was obtained which can be grouped according to the Sudjana scale (Sudjana, 2010). Data on student interest in LKPD is on a medium scale (77). This showed that students are interested in and like the application of learning media using LKPD to facilitate understanding. However, there were still some students who did not understand the forms of LKPD as a learning medium. For this reason, lessons were needed using LKPD media.

Educators as leaders in the teaching and learning process are expected to be able to design learning well (Suwastini et al., 2022; Arpan &

Sahbidin, 2017; Feladi et al., 2023; Sii et al., 2017). Learning media is needed to facilitate learning and provide meaningful and enjoyable learning for students (Hernando et al., 2022; Lesmana et al., 2019; Sulistiyarini et al., 2018; Batubara, 2023; Feladi et al., 2017).

The sample of students from previous types of education can influence the perception of developing LKPD with learning that has been carried out at the junior high school or MTs level because there were students who have carried out learning using LKPD and there were students who did not know about LKPD. LKPD needs to be made attractive in format and designation according to students' backgrounds, such as the different learning styles of students at SMA Negeri 19 Tebo.

Differentiated learning as a learning strategy needs to be implemented considering that students have different backgrounds and needs. Based on the results of the needs analysis from the instrument, medium-scale data was obtained which showed that students were interested in differentiated learning. This showed that students have begun to understand differentiated learning, but it still need to be applied frequently considering its advantages.

The advantage of this interactive LKPD is that it has an attractive appearance and can motivate students to learn (Suwastini et al., 2022). LKPD can be displayed attractively and systematically according to the scope of material to be covered, student needs, and interests of SMA Negeri 19 Tebo students.

Interest is included in the factors that determine learning success. If students are interested in the learning process being carried out, then students will be interested and can participate in learning well, which in the end can achieve learning outcomes according to learning objectives. Based on the results of the needs analysis, a perception of interest on a high scale was obtained (82). This showed that students with their diversity understand their interests and have good perceptions of interests.

The uniqueness and diversity inherent in each child include learning styles (auditorium, visual, kinesthetic), academic ability (high, medium, low), speed in understanding lessons (some students are fast in understanding lessons, some are moderate, even slow), learning orientation (mastery, performance

approach, performance avoidance) motivation (high, medium, low), self-efficacy (high, medium, low), and interest (interest in certain lessons) (Wulandari, 2022). For this reason, teachers must continue to strive to carry out student-centered learning through differentiated learning to develop potential according to their interests to improve learning outcomes.

Each learning process carried out has different learning objectives according to the learning material, the results that students will achieve in different ways, and the learning outcomes are also varied in the form of cognitive, psychomotor, and affective abilities. Based on the results, it was found that students had a good perception of learning outcomes as indicated by a high scale of 83. This showed that students understand learning outcomes.

For this reason, learning outcomes can be achieved by implementing appropriate learning media, one of which is LKPD (Rahman et al., 2020; Adawiyah et al., 2021; Zumratul et al., 2023; Laili et al., 2022; Hurrahma & Sylvia, 2022; Salwan & Rahmatan, 2018; Firdaus & Wilujeng, 2018). However, the need for developing LKPD has advantages compared to previous research because the LKPD is prepared based on differentiated learning which applies student-centered learning by adjusting students' backgrounds and needs which in the end can increase the interest and learning outcomes of SMA Negeri 19 Tebo students. Learning using LKPD is effective in improving student's learning outcomes, knowledge, attitudes, and skills (Suwastini et al., 2022).

Learning can be done with various approaches, strategies, methods, models, and techniques. Differentiated learning strategies can be applied as student-centered learning so that students are more active as student-active learning (Daulay, 2023; Neumann, 2013; Lightweis, 2013; An & Mindrila, 2020). Along with the times with advances in various technologies, students can obtain learning resources from various sources. The teacher only acts as a facilitator by carrying out interesting learning for students so that students obtain meaningful learning according to their background.

The increasingly rapid development of technology can be utilized in the world of education, especially as a learning medium

(Kusnasari & Rakhmawati, 2022; Sholihah et al., 2023; Muna et al., 2023; Ananda & Rakhmawati, 2022). It is time for all components of education, such as schools, to take advantage of technological developments. Likewise, teachers can utilize learning media that suit students' backgrounds and needs, such as using LKPD based on differentiated learning.

LKPD that is designed or developed does not only assess cognitive abilities but is also expected to be able to collaborate with students' physical activity in understanding the concepts of experimental and non-experimental material (Suwastini et al., 2022). Based on the results, it was known that students have a good perception of the development of LKPD based on differentiated learning. This showed that LKPD based on differentiated learning needs to be applied frequently in learning activities to suit the needs of students with different backgrounds.

LKPD is developed to suit the student's background/student characteristics, such as the student's learning style. The student learning style in question is a visual learning style, auditorium, or kinesthetic. It is also hoped that learning is appropriate to students' learning styles, such as the application of learning differentiate, then students will improve their learning outcomes.

Differentiated learning is an adjustment to students' interests, learning preferences, and readiness to achieve improved learning outcomes (Herwina, 2021; Yulianti et al., 2024; Afandi et al., 2024; Heningjakti & Surono, 2023; Mavidou & Kakana, 2019). LKPD is prepared according to the ADDIE model which includes five stages, namely the analysis stage, design stage, development stage, implementation stage, and evaluation stage. The results of the assessment of the development of LKPD based on differentiated learning were also adapted to the ADDIE development model.

The process of developing LKPD based on differentiated learning is more pro-student because it is prepared based on the material and student background compared to previous research, namely the development of LKPD to improve students' learning process skills which

are prepared based on material only (Suwastini et al., 2022).

The differentiated LKPD contains novelty, namely the preparation of LKPD not only includes the material to be achieved but is also prepared based on the student's background and student needs. Likewise, the results of the needs analysis for the development of differentiated learning-based LKPD are more in line with the curriculum that is being implemented, namely the Merdeka Curriculum, compared to previous studies that had different curricula.

The limitation of this research is that students in Phase E class at SMA Negeri 19 as a study group implementing differentiated learning according to the newly implemented curriculum are still limited to one class. Considering the importance of student-centered learning with differentiated learning, lessons should be carried out using appropriate learning media such as LKPD by developing LKPD to increase student interest and learning outcomes so that followed up to be adopted and implemented in the classroom/school.

CONCLUSION

The problem of low student interest and learning outcomes requires solutions/problem-solving by selecting learning media and implementing appropriate learning strategies. The application of LKPD media based on differentiated learning is very relevant to be implemented in classes/schools today as a fulfillment of student needs to increase student interest and learning outcomes. According to the results of the needs analysis, the development of LKPD based on differentiated learning is expected to be able to increase interest and learning outcomes in Biology for Phase E students SMA Negeri 19 Tebo. Therefore, LKPD based on differentiated learning should be applied in learning, especially for Biology learning in high school by continuing to develop LKPD as a learning media.

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