

Analysis of the Need for Collaborative Student Worksheets on Biology Material at SMA Muhammadiyah 3 Jember

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Abstract: Enjoyable learning can be achieved in various ways, namely through innovation and creativity in the classroom with collaboration capabilities. The ability to collaborate allows students to work together, share responsibilities, and solve problems during group projects. This research is survey research to determine the needs of teachers and students for a product in the form of collaboration-based Student Worksheets for students. This research aims to determine the need for learning media in the form of collaboration-based student worksheets. The method used to collect data is through interviews and the results of teacher and student needs assessments. The instrument used in this research was a questionnaire. The results of the analysis state that the development of collaboration-based Student Worksheets needs to be developed to improve students' collaboration abilities. This is based on the results of student needs assessments where many students are less able to apply collaboration skills when given group assignments. Teachers and students need collaboration-based learning media for Student Worksheets because they are considered to facilitate the biology learning process and are effectively used to build student collaboration.

Keywords: Collaboration, LKPD, Needs Analysis

INTRODUCTION

Education is a systematic activity and process consisting of several components, including teachers, students, curriculum, facilities and administration. Individual components should not be isolated or isolated. But instead, they must be united, complement each other, and be able to work together. Education includes various elements such as methods and use of media (images, graphics, sound, and multimedia). Education is an effort to create a learning atmosphere and learning process so that students can actively develop their potential to acquire the characteristics, personality, intelligence and skills needed by themselves and the community, nation and state (Yuliawati *et al.*, 2020). To achieve this, learning objectives must be met through the use of learning resources and mentoring. In this modern era, teachers are expected to be more creative in their approach to teaching or guiding students. To ensure that students are taught with integrity and a strong sense of responsibility to help them face the challenges of the 21st century, teachers as forecasters in the classroom have the responsibility to improve students' character in the areas of knowledge, morality, and hard work (Ichsan *et al.*, 2018). The goal of education in the 21st century is to achieve learning goals, improve critical thinking skills, problem solving abilities, competent communication, innovation, and creativity (Yulanda & Rahmi, 2022).

One alternative that teachers use in teaching is by using learning media that can facilitate students to increase students' activeness and collaboration abilities during the learning process. The most significant factor influencing the effectiveness of the learning process is the learning media used during the learning pro-

cess. Learning media is a tool that teachers can use to convey information to students regarding subject matter so that it is easier to understand (Nurhasanah & Herlina Usman, 2023). The purpose of learning media is to help students achieve the desired goals when they use it. The learning media system is designed and developed based on the characteristics and needs of students.

According to (Mardiana *et al.*, 2019) an ideal learning process does not deviate from the teacher's approach in maximizing students' work in order to achieve the desired results. Fun learning can be achieved in various ways, namely through innovation and creativity in the classroom. There are various innovative ways that teachers can use to obtain interesting classes, such as using interesting learning media, improving learning media, and so on. The innovations mentioned above can help improve students' collaboration abilities. Collaboration skills are a very important component in the learning process. The ability to collaborate allows students to work together, share responsibilities, and solve problems during group projects. During discussion activities, students can use their personal knowledge and experience to overcome obstacles and improve their ability to interact with other people. In this way, they can become more self-aware and creative individuals in finding solutions to problems that arise (Yuliana, 2021). The level of student activity in class will have an impact on their ability to collaborate (Alfaeni *et al.*, 2022).

Effective teaching methods can also help develop collaboration skills. Effective use of learning media can help teachers build learning groups of more capable students and help achieve learning goals more effectively. Effective learning media can help students understand the material provided by the teacher, as well as improve their ability to collaborate and solve problems as a group. One of the effective learning media used during the learning process is LKPD. LKPD is a tool used by students to complete assignments given by the teacher (Benhadj *et al.*, 2023). LKPD can be in the form of traditional or digital worksheets and have the aim of helping students understand the material being taught (Devindo *et al.*, 2022). To improve collaboration capabilities, LKPD must focus on initiatives that can support team members in working together, dividing tasks and resolving conflicts together. Worksheets should also help develop group skills, which are important for solving problems and improving collaborative abilities.

Several researchers focus on research to analyze students' needs in using learning media such as LKPD. Needs analysis is the process of understanding what is needed to satisfy a particular need or problem (Arini & Sulistiyono, 2023). There is research whose focus is only limited to analyzing student needs. Therefore, this research intends to develop research related to analyzing the needs of LKPD based on students' collaboration abilities. An obstacle often faced by biology teachers at SMA Muhammadiyah 3 Jember is that they must truly understand the characteristics of different students so that the teaching strategies used must be adapted to the characteristics of these students. In the ongoing learning process, teachers usually use a project-based model so that students can collaborate with fellow students and are able to take responsibility for their respective roles in collaborative activities.

The results of observations carried out by researchers on Tuesday, January 23 2024 revealed that the learning needs of students at SMA Muhammadiyah 3 Jember in biology subjects were in the development of learning media for the learning process. Where the development of learning media will greatly influence the learning process and the enthusiasm of students in carrying out the learning process in class. The use of learning media in the form of LKPD has so far been felt to be less effective because students have different characteristics, so to meet the needs of LKPD it must be adjusted to the characteristics of each student. This means that to increase students' interest in learning, teachers must use creative learning materials and media (Artikel, 2023). After observing with the biology teacher, students will be given LKPD if the biology teacher

is unable to attend class so that the LKPD is given to measure the students' ability to understand the material presented by the teacher.

The aim of the research to be carried out is to create LKPD learning media based on collaboration skills rubrics. Based on the research that has been carried out, there are several problems in the learning process in biology subjects at SMA Muhammadiyah 3 Jember, so the researcher intends to analyze the need for developing LKPD based on collaboration skills to make it easier for students and teachers in the learning process. Based on previous research by Lidya Husnita et al, it is stated that needs analysis in the form of LKPD needs to be developed as a material to support learning activities.

METHOD

This type of research is development research or commonly known as Research and Development (R&D). Development research is used to produce a product and test the effectiveness of that product. This observational research activity was carried out in January 2024 at SMA Muhammadiyah 3 Jember. The population and sample used in this research were class X C students with a total of 25 students in one class.

Data collection techniques are carried out using the results of teacher and student needs assessments to determine the needs of students in the learning process. Meanwhile, the instrument used is a validation sheet to ensure that the development of the LKPD is feasible and effective for use in the classroom learning process. The data analysis technique used in the research is to measure the validity of the LKPD being developed, to measure the practicality of the LKPD from student responses and to measure the effectiveness of the LKPD from the pretest and post-test results (Arini & Sulistiyono, 2023).

RESULTS AND DISCUSSION

Analysis of LKPD needs based on collaboration capabilities is carried out to ensure that the products made are in accordance with students' needs. So, in this research, we will describe the information that researchers obtained from the results of teacher and student needs assessments. This data will later be used as a basis for developing LKPD based on collaboration capabilities. So, the results and discussion will be discussed further regarding the results of the needs assessment of teachers and students at SMA Muhammadiyah 3 Jember.

Based on the results of a short interview with the biology teacher, it was revealed that students have different abilities for each individual. Biology teachers usually overcome these problems by innovating the learning process in the classroom, for example by using learning media that can encourage students to be active and collaborate with their colleagues. According to information from biology teachers, the learning process often focuses on teachers and students understanding the material presented in a learning group more quickly. So in every study group there are students who only rely on their friends without any desire to work together in groups to search for information. According to (Desriva & Relsas Yogica, 2023) student participation in the learning process is necessary because with increased student participation in the learning process, learning objectives can be achieved successfully. Basically, students' collaboration abilities are those who are able to reach the analysis stage, but it is not uncommon for students to have the ability to only explain. However, this is not completely an obstacle in the learning process, there are many ways that can be used to overcome this problem, such as by providing fun games so that students can express their respective abilities.

Based on the results of the teacher needs assessment, the results showed that teachers developed learning media adapted to current developments, for example when the material was environmental change, stu-

dents carried out field studies and were assigned to make mini vlogs related to the material so that students were more interested and not bored. The learning models that are often used, namely PBL and PjBL, are adapted to the material and characteristics of the students. The teaching materials that teachers usually use when learning are textbooks provided by the school, internet literature and learning videos. Meanwhile, the learning media that are usually used are power point and video. The use of technology is also being developed so that students are more interested and able to follow developments in this modern era. The assignment can be in the form of making learning videos where students can use cellphone technology and will later be uploaded to the Instagram page. Apart from that, sometimes teachers also provide learning media in the form of LKPD when they are unable to attend class.

Based on the results of the needs assessment of 25 students, there were 18 students who had filled out the questionnaire. The results obtained were that 83.3% of students liked and were interested in learning biology and they thought that not all biology material was difficult to understand, whereas according to 66.7% of students they thought that biology was a subject that was difficult to understand. According to 66.7% of students, environmental change material is classified as material that is difficult to understand because the learning media used is boring or less interesting. According to (Ummah, 2021) students need teaching materials and learning media that are interesting and able to increase their interest in reading to help them learn subject matter that is considered difficult. According to 94.4% of students, it is easier for them to analyze environmental problems from the surrounding environment than the context of books, they remember more easily by seeing direct examples from the surrounding environment, like to use learning media with an attractive appearance, and they do discussion activities with group friends in carrying out their assignments. 83.3% of students remember more easily by seeing than hearing and they are more interested in learning media that displays pictures and videos as well as direct practical activities. 55.6% of students are interested in practical learning media, for example LKPD, but they don't like it if the learning media is in printed form. According to 77.8% of students, they agree if learning media such as LKPD are developed which are based on analyzing problems from the surrounding environment by developing effective and efficient collaboration skills.

Efforts made by teachers to facilitate students are by adjusting the characteristics of students. The assignments given to students are carried out in stages, for example with project assignments, so at each meeting each study group will explain the progress of the projects that have been carried out. Based on the problem of the lack of effectiveness of LKPD when given to students, it can be resolved by creating new innovations, for example using e-LKPD which can be modified with moving animations so that it can attract students' attention to try to do it. This is in accordance with the explanation given by the biology subject teacher at SMA Muhammadiyah 3 Jember. According to (Gusrianti *et al.*, 2023) learning will go more smoothly if students are taught in a calm way. This is because if students are only taught the material orally by the teacher, they will not be able to understand the material taught previously. Effective teaching methods can increase students' attention and motivate them to take active steps toward understanding concepts (Fina *et al.*, 2023). To ensure that students are taught with integrity and a strong sense of responsibility to help them face the challenges of the 21st century, teachers as forecasters in the classroom have the responsibility to improve students' character in the areas of knowledge, morality, and hard work (Azzahra *et al.*, 2023).

CONCLUSION

Based on this preliminary analysis, this research focuses on analyzing LKPD needs based on collaboration capabilities. This research will analyze information from teacher and student needs assessments, which

aims to develop collaboration-based LKPD. Teachers need collaborative LKPD to facilitate the learning process, especially biology material. Researchers also found that the majority of students felt that collaborative LKPD-based learning media was effective in helping students complete group assignments. However, there is still room for improvement in the use of collaborative LKPD-based learning media.

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