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The Availability of E-Modules as a Learning Media in Problem Based Learning at SMA N 11 Pekanbaru

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Abstract: This research is a preliminary study that aims to determine the availability and feasibility of the E-Module, as well as the views of students and teachers on teaching materials that have been used so far in SMA Negeri 11 Pekanbaru. This study uses a survey method. In the research instrument used is a questionnaire. The research sample was 50 high school students and 1 Biology teacher. The results showed that from the student's perspective on the Development of Biology E-Module Teaching Materials as a whole it has an average percentage of 72.43% in the Good category. The highest student response is in the Learning Implementation Process indicator, with a percentage of 100% in the Very Good category, and the lowest student response is in the indicator of Utilization of E-Module teaching media in biology subjects, with a percentage of 50% in the Enough category. Meanwhile, from the perspective of the teacher as a whole, it has an average percentage of 75% in the Good category. The highest teacher response is in the Learning Implementation Process indicator, with a percentage of 100% in the Very Good category, and the lowest teacher response is in the *E Module Usage indicator,* with a percentage of 50% in the Enough category. Based on the results of this study it can be concluded that from the perspective of students and teachers it is necessary to develop E-Modules based on Problem Based Learning (PBL), as teaching materials for class XI in SMA/MA to increase students' knowledge of Biology subject matter.

Keywords: Learning Media, Biology *E-Module* , Problem Based Learning (PBL)

INTRODUCTION

Education is a necessity in the life of every individual, so this education is very important and must be fulfilled in individual life (NKSari & Suprihatin, 2018) . Therefore, this educational process cannot be separated from what is called the learning process (Shanley, 2018) . Education at this time is needed in order to improve students' abilities, most importantly in keeping up with the times that are

increasingly developing (Zagoto et al., 2019) . Where development in education is highly directed and aims to develop quality human resources (Ariani & T, 2017) .

Learning Biology is a method for exploring the principles and concepts of learning (S. et al, 2016) . That the material or learning materials for biology in general are in the form of facts, concepts, principles and theories (Lufri, 2007) . Says that learning biology is a process of interaction for students by their environment so that there is a change in students' attitudes towards a better direction (Rahayu, 2009) . According to (Purwasari, 2013) stated that "science learning has a very important position in advancing the quality of students so that it focuses on increasing students' knowledge regarding themselves and the natural surroundings.

Where students feel bored with teaching materials and teaching media and don't listen to the teacher explaining in front of the class they are engrossed in talking with their classmates. and in this school there is only Teaching materials and teaching media available at this school are only printed books, LKS, and interactive books, and use blackboard media. There are teaching materials in the form of modules, but these modules only contain material and practice questions which are dominated by long texts without any attractive and innovative designs, this makes students feel bored and does not pay attention to the teacher, and affects the attractiveness of students not to read it and use it as teaching material. And media teaching materials such as e-modules do not yet exist in this school. Where the researcher made this observation to collect information related to the availability of teaching materials and teaching media in the form of Problem Based Learning (PBL) based e-modules.

Problem Besad Learning (PBL) in Indonesian is problem-based learning, namely a learning process that exposes students to a clear problem before going through the learning process, which spurs them to research, describe, and seek solutions (Hartono & Maryati, 2018) . According to (Retnowati & et al, 2018) also describes that the problem of bead learning (PBL) is able to elevate the psychology of students in problem solving. As for conformity in the 2013 curriculum, learning activities with students (P. et Al, 2021) .

Where is the Problem Based Learning approach, the 2013 Curriculum is highly recommended for all levels of education, including high school. Diaman problem-based learning approach is defined as an approach that involves students in an activity or problem to produce a product. Problem Based Learning learning references are one of the ideal learning references to be applied in Biology or Science learning (Safrida & Kistian, 2020) . According to (Qudwatullathifah & Ridlo, 2020) with problem-based learning (PBL) learning, students are expected to become more impressed with learning and find solutions to these problems. According to (Purnomo et al., 2019) the use of problem-based learning (PBL) makes students better understand the material and has a long retention.

A teacher is one of the elements of learning that has an important role in achieving success in learning (Pitaloka & Suyanto, 2019) . In a learning model, the teacher really needs a guide in designing learning in the classroom so that it can make students more active and creative, and with this learning model students can

achieve learning goals effectively and efficiently (Nasution, 2020) .

The teacher is like a liaison who has a position in giving a problem to students by building a group to discuss the problem, students look for information - information to solve this problem, then discuss it with their members and communicate it so that other members understand, then present the results of the discussion earlier in front of the class (Sartono et al, 2017) . According to there are several teacher characters in teaching and learning procedures including providing learning methods, with a position as a link in the relationship between teachers and students (Apriansyah & Lindawati, 2022) .

According to (Tafonao, 2018) learning media is anything that has an interest in the means of conveying the mandate that will be conveyed to students, so that it can encourage their thinking, feelings, and students' interest in learning procedures. (Wahyuni & Etfita, 2020) Even the existence of this particular learning media can increase student motivation in learning from the material to be taught so that it is easy for students to understand. Learning media is a container for distributing messages and reports that are well designed and planned to help students achieve a learning goal and can create a conducive learning environment so that the learning process can run efficiently and effectively (Yanto, 2019).

This learning media is highly valued to help teachers in the classroom. In research (Sattriawan et al., 2020) & (Putri & Sibuea, 2014) that teachers still use conventional methods and make little use of multimedia in learning procedures which will result in a lack of interest in lessons and low student learning outcomes. In the Biology learning procedure it is very necessary to use the help of concrete tools so that students have better principles about natural conditions (Chan, 2017).

E-module or also known as electronic module is a kind of module in digital form, which has components namely text, images, animation, and both which contain digital electronic teaching media which also contains simulations that can and should be used in teaching and learning procedures in class (Herawati & Muhtadi, 2018) . In implementing the electronic module (e-module), it is considered that it is capable and efficient in updating conventional book consumers, however, this electronic module can still function as a source of information or news (Sa'diyah, 2021) .

E-modules have a potential effect on learning outcomes so that it can be said that the use of e-modules in learning procedures is to improve student learning outcomes (Pramunando & Yerimadesi, 2019) . According to (DPSMA, 2017) e-module is a form of presenting self-learning material that is arranged systematically into certain learning units, presented in an electronic format, where each learning activity in it is connected with a link (Link) as a navigation that makes students become more active with the program, equipped with presentations in the form of video tutorials, animations and audio to enrich the learning experience. (DPSMA, 2017).

Where the teaching materials and teaching media available at this school are only printed books, worksheets, and interactive books, and use blackboard media. There are teaching materials in the form of modules, but these modules only contain material and practice questions which are dominated by long texts without any

attractive and innovative designs, this makes students feel bored and does not pay attention to the teacher, and affects the attractiveness of students not to read it and use it as teaching material. And media teaching materials such as e-modules do not yet exist in this school. Where this e-module is an application in a learning procedure that has a systematic way and brings students to achieve a competency goal that should be with a level of difficulty (E. et Al, 2020) . Therefore the researcher wants to know about the availability of e-modules in schools, where this research is a preliminary study which aims to find out from the views of students and teachers on learning media and teaching materials that have been used so far in schools.

METHODS

Research Design

Where this research is survey research, namely sampling activities to collect population data using a questionnaire. This sample is taken using a *simple random sampling technique*. The *simple random sampling* technique is a system in which to take samples where each population group is given equal or comparable opportunities for samples (Arieska, 2018) .

Population and sample

The population taken consisted of all class XI students at SMA Negeri 11 Pekanbaru. The research sample consisted of 50 high school students and 1 biology teacher. Where 1 biology teacher who taught in class XI was used as a research sample. And this research was conducted by researchers in October 2022.

Research instruments

The instrument used is a questionnaire. Where the data collection instrument can be a questionnaire. The questionnaire consists of 3 indicators. And these 3 indicators include: the Learning Implementation Process, Utilization of E-Module teaching media in biology subjects, and Use of E-modules. Here the researchers discuss biology learning which is the subject of the respiratory system in humans. And the research data were analyzed descriptively and quantitatively. As well as data in the form of numbers that are useful for explaining the need for products, and qualitative data in the form of descriptive. The data analyzed was divided into several categories namely: Very poor (0 – 2%), Poor (21 – 40%), Enough (41 – 60%), Good (61 – 80%), and Very good (81 – 100%).

RESULT AND DISCUSSION

Results of Research Procedure

The data that has been obtained in this observation is a response to the questionnaire that was distributed. As for the research data regarding the perspective of students on the development of Biology Learning Media, it can be seen in Table 1.

Table 1. Recapitulation of All Indicators of Student Perspectives on the Development of Science-Biology e-module Learning Media.

No	Indicator	Percentage %	Category
1.	Learning Implementation Process	100	Very good
2.	Utilization of E-Module teaching media in biology subjects.	50	Good
3.	Use of E-modules	67.3	Enough
Amount		217.3	
Average		72.43	Good

The results of the analysis of the needs of learning media obtained from the perspective of students show that in the Learning Implementation Process indicator, 100% is in the very good category. It can be seen from the research that has been conducted that in general students are enthusiastic about participating in the biology learning process in class. While the lowest indicator is the use of e-module teaching media in biology learning, 50% is in the Enough category, it can be seen from the research that has been conducted where students are sufficient in using and utilizing teaching media and teaching materials in schools. Overall, the average percentage of learning media needs analysis was obtained from the student's perspective of 72.43% in the Good category. It can be seen from the research that has been done, where students become more enthusiastic in learning when using interesting learning media.

Subsequent data was obtained from the results of completing a questionnaire by 1 Biology teacher who taught in class XI SMA Negeri 11 Pekanbaru. Where is the research data regarding the teacher's perspective on the development of science-biology e-module learning media, can be seen in Table 2.

Table 2. Recapitulation of All Indicators of Teacher's Perspective on the Development of Science-Biology E-Module Learning Media

No	Indicator	Percentage %	Category
1.	Learning Implementation Process	100	Very good
2.	Utilization of E-Module teaching materials in biology subjects	75	Good
3.	Use of *the E Module*	50	Enough
Amount		225	
Average		75	Good

The results of the analysis of learning media needs obtained from the teacher's perspective show that the highest indicator is the Learning

Implementation Process. By 100% in the very good category, it can be seen from the results of the research that has been done that in the Biology learning process the teacher has made students more enthusiastic to take part in biology learning in class. While the lowest indicator is the use of E-modules. By 50%, in the sufficient category, where teachers still use teaching materials and teaching media in class in the form of printed books and interactive books. Overall, the average percentage of learning media needs analysis obtained from the teacher's perspective is 75%. With the Good category, it can be seen from the research that has been done, that teachers are interested if problem-based learning based e-modules can be used as learning media in schools.

Discussion

Based on the data above, the research results were obtained from 2 perspectives, namely the perspective of students and teachers. The results of the first study from the perspective of students obtained the result that the highest response was found in the indicator of the learning process implementation, amounting to 100% in the very good category, which can be seen from the research that has been carried out that in general students are enthusiastic about participating in the biology learning process at in class.

Where the lowest response from the perspective of students is found in the Indicators of Utilization of E-Module teaching media in biology subjects. by 50% in the sufficient category, it can be seen from the research that has been conducted where students have used textbooks or other handbooks. And where teachers still use teaching materials in the form of printed books and interactive books to explain the material, and still teachers only use learning media in the form of blackboards. And here students tend to get bored and students don't really focus on what the teacher explains in front of them. Where learning media functions as a tool for teachers used in the teaching and learning process in the classroom, so the teacher must review all the information contained so that it can be absorbed quickly by students.

Overall, from the perspective of students, an average percentage of 72.43% is obtained in the Good category. This is because in detail students have used teaching materials and learning media in schools, such as using printed books, interactive books, whiteboards, and modules, but the modules used are still in a simple form that consists of material and exercises and seems less innovative. . Learning media such as e-modules have never been used at the school. E-modules are teaching media in the form of electronics from a module in which this module has been printed and can be read on a computer or electronic book reader and modified in the necessary software (Wibowo & Pratiwi, 2018) . According to (Hamzah & Mentari, 2017) e-modules are also called sharing an independent learning experience for students so that students can learn to dismantle a problem in its own way.

And in the results of the second study, namely from the teacher, it was found that the highest response was obtained on the Learning Implementation Process Indicator with a percentage of 100% in the very good category, it can be seen from the research that has been done, in the Biology learning process in general the

teacher has made participants students are more enthusiastic in participating in biology learning in class. however, teachers still use teaching media in the form of printed books and interactive books, which are provided at the school. Where the media is really needed in providing student learning processes where the delivery is adjusted to the learning objectives set and of course really helps students in knowing or understanding learning material (Miftah, 2020) . According to (Suhartono, 2019) learning media is anything that is obtained by transmitting a message, arousing the thoughts, feelings, and willingness of students which can encourage the realization of a learning process in students.

Where the lowest response from the teacher's perspective is in the use of *e-modules* with a percentage of 50% in the sufficient category, it can be seen from research that has been conducted by 1 biology teacher who teaches in class XI who has never used e-modules in both print and electronic form equipped with Problem Besad Learning.

Overall, from the teacher's perspective, it is obtained at an average percentage of 75% in a good category. It can be seen from the research that has been done, that teachers are interested if e-modules as learning media based on problem-based learning can be used as teaching media in schools. Where a success in the learning process is also influenced by the various learning components used. That is one of the components that has an important character to support the learning process, namely learning media. The existence of this learning media is used to relieve teachers in presenting material in learning procedures, the use of media is balanced with the purpose of use and the information to be conveyed (P. et al, 2018) .

Thus, it is necessary to develop learning media in the form of e-modules based on problem based learning. With that going, the use of e-modules has advantages, namely students can learn independently and are more flexible in their use, and have components in them that are able to attract students' interest in learning because it combines various things such as text, music, video animation so that it can motivate them to learn. learning (Luh & Karang, 2021) . And students can understand the material in Biology learning and not only through printed books and interactive books, but students can use e-modules as interactive learning media that have been designed in such a way as to make it easier for students and teachers to carry out activities. learning to teach in the classroom.

CONCLUSION

Therefore, the results of the research obtained show that from the point of view of students and teachers it is necessary to develop an e-module that is problem-based learning, as a learning medium in class XI SMA.MA to increase students' knowledge of Biology learning material.

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