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Interactive Learning for Teaching Physics Subjects at MA Nurul Huda Talang, Saronggi, Sumenep, Madura

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Abstract. *Physics is a subject that students are less interested in because it has a high level of difficulty in understanding, so to increase students interest and sympathy for physics, learning media that is interesting and not monotonous is needed. However, the reality in the field is that there are still very few teachers who have the skills and abilities to develop interesting learning media such as interactive learning media such as "Interactive Learning". Learning with Interactive Learning is believed to be able to stimulate good and efficient student development. The objectives of this activity include producing interactive macromedia flash learning media that is easy to learn and to find out the advantages of macromedia flash interactive learning media when compared to power point. So with this activity it is hoped that it can increase students abilities and interest in teaching and learning activities in Physics subjects at MA Nurul Huda Talang, Saronggi, Sumenep, Madura. The results of this service prove that the existence of interactive learning for teaching Physics subjects at MA Nurul Huda Talang, Saronggi, Sumenep has a positive impact and is able to increase students interest and abilities in the process of teaching and learning Physics subjects. Apart from that, the interactive learning activity has provided motivation to Physics teachers at MA Nurul Huda Talang, Saronggi, Sumenep, Madura to further improve their abilities in creating more interesting and innovative teaching materials.*

Keywords : *Physics, Media, Interactive Learning.*

1. INTRODUCTION

Education can be an important forum for the country to develop human resources, one of which is for students to develop themselves according to their potential. This is in line with Law Number 20 of 2003 concerning the National Education System which explains that education is intended as a conscious and planned effort to create a learning atmosphere and learning process so that students actively develop their potential to have religious spiritual strength, self-control, personality. , intelligence, noble morals, and skills needed by himself, society, nation and state. Based on this law, a change in the learning process is needed that is not oriented towards educators (Teacher Centered Learning), but oriented towards students (Student Centered Learning) so that students have the potential to develop their interests, motivation and abilities to become proactive, creative and innovative. and is responsible for the process of learning activities. In this case, educators play more of a role as facilitators who encourage student development, especially in physics learning.

Physics is a branch of science that studies and provides understanding both qualitatively and quantitatively about various phenomena or natural processes and the properties of substances and their applications. Physics is one of the subjects that SMA/MA

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students still consider difficult because the physics concepts are abstract and full of formulas. The use of physics learning media that does not suit the characteristics of students makes students' learning motivation and mastery of physics concepts very low.

For most students, physics is still considered very difficult to learn (Irwandani et al., 2017; Lestari et al., 2019). Even though physics is an important field of science to master. Physics is the science of natural phenomena expressed in the form of facts, concepts, principles and laws whose truth is tested and through a series of activities in the scientific method (Dewi et al., 2018; Diani et al., 2018). Physics is not a rote lesson but rather requires understanding and application of concepts so that meaningful learning activities occur (Latifah et al., 2020). Learning physics requires understanding concepts that already exist in theory so that students can solve problems related to physical phenomena around them (Kurinta et al., 2021).

The decline in students' interest in learning and lack of mastery of physics material was stated by several previous researchers. The results of research conducted (Riskawati et al, 2022) show that the majority of students (58%) have "low" interest in physics and only a few (3%) have high interest. The low interest of high school students in Gowa Regency can be influenced by several factors, one of which is that physics educators do not carry out practical activities at all and tend to teach theories in writing and orally when teaching physics at school.

The research results (Husna, 2021) also show that students in class X Science at MAN 1 Merangin have a low interest category in physics subjects, namely 55,7%. This is because students do not like physics lessons because they are very difficult to learn. Apart from that, students quickly get bored with the learning methods used by educators and the long study time.

From the research results above, it can be concluded that students interest in studying physics is low because physics lessons are difficult to learn, supported by lessons taught with more theory and less practical work, in addition to the long time studying physics, causing students to learn quickly. bored with the learning methods used by educators. This results in a less interesting physics learning process.

To maintain the quality of education, the government is developing digital technology in the era of industrial revolution 4.0 and society 5.0. The development of learning media is one measure of the success of digital technology development in the education sector. This is in line with the opinion of Trianto (2007: 103-104), who believes that science learning (including physics) in schools must be able to introduce the world of

technology through learning. Education can be said to be good if the learning media used is interesting and interactive. The physics learning media used by educators must be interesting and interactive, but in reality it is still monotonous, not interactive, and cannot include learning related to the senses of hearing and sight alone.

The development of interactive learning media is very necessary in an effort to increase students' interest in learning and mastery of the material. Therefore, this community service activity was carried out with the aim of finding out the superiority of the interactive learning media Macromedia Flash when compared to Power Point. So, with this activity, it is hoped that it can increase students' abilities and interest in teaching and learning activities in Physics subjects at MA Nurul Huda Talang, Saronggi, Sumenep, Madura.

2. METHOD

This community service was carried out on November 2 – December 2 at MA Nurul Huda Talang, Saronggi, Sumenep, Madura. It is hoped that this community service will increase students' abilities and interest in teaching and learning activities in Physics subjects at MA Nurul Huda Talang, Saronggi, Sumenep, Madura. Apart from that, with this community service, it is also hoped that it will provide motivation to Physics teachers at MA Nurul Huda Talang, Saronggi, Sumenep, Madura to further improve their abilities in creating more interesting and innovative teaching materials.

The time schedule for implementing this community service is preparation for approximately two months, the core activities are presentation and explanation of Physics subject material to students at MA Nurul Huda Talang, Saronggi, Sumenep, Madura which is carried out for approximately one month, as well as reporting on activities for one week. This core community service activity is carried out through several stages, namely :

a. The first stage, determine the test targets, namely learning design experts, material experts, media experts, and students. The input expected from each expert is the suitability of the material description with competency standards and basic competencies, the accuracy of the material, and learning support materials.
b. Second stage, individual trial (one-on-one test). In this step, teaching material is delivered to one of the students using the interactive learning media Macromedia Flash. Apart from that, at this stage we also provide an assessment questionnaire to the students with the aim of revising and evaluating the Macromedia Flash interactive learning media. The input given by the students is then used as a basis for making improvements at the next stage.

c. The third stage, small group testing. This trial was carried out to find out whether there were still deficiencies that needed to be corrected in the Macromedia Flash interactive learning media. At this stage, we also provide an assessment questionnaire to students to revise and evaluate the Macromedia Flash interactive learning media. The input provided by these students is then used as a basis for making improvements at the next stage
d. The fourth stage, field trials or delivery of material in class. At the stage of delivering this material, the activity began with a presentation of material delivered by lecturers from Bahaudin Mudhary Madura University (UNIBA) Madura. The lecturer delivers material using interactive learning media Macromedia Flash and students in the class listen to what the lecturer says. This material delivery session was very interactive and students were very enthusiastic about listening to what the presenter had to say.
e. Fifth stage, discussion. After the material delivery session is complete, the activity continues with a question and answer session or discussion between students and the presenter to discuss things that are not yet understood or questions that the students wish to ask the presenter. This discussion session was very interactive. The students in the class had an extraordinary enthusiasm for asking questions about things they did not understand. Through this discussion, students can ask or clarify things that are confusing or things that are not yet understood and get answers directly from the presenter with the aim of deepening their understanding.

3. RESULTS

Individual trials were carried out on 3 class X students consisting of 1 student who had a high achievement, 1 student who had a medium achievement, and 1 student who had a low achievement. The aim of carrying out this individual trial is to identify the shortcomings of the interactive learning media Macromedia Flash. The results of the trial in the form of assessment scores for the interactive learning media Macromedia Flash for Physics subjects in individual trials can be seen in Table 1.

Table 1. Macromedia Flash Interactive Learning Media Assessment Scores on Individual Trials Regarding the Quality of Learning Materials

No	Assessment Indicators	Respondents			Total Score	Criteria
		1	2	3		
1.	Material suitability	9	10	9	28	Very Good
2.	Clarity of study instructions	10	8	8	26	Very Good
3.	Ease of understanding sentences	8	9	10	27	Very Good
4.	Ease of understanding learning	10	10	9	29	Very Good
5.	Accuracy in the order of presentation	9	8	9	26	Very Good
6.	Sufficiency of exercise	7	8	7	22	Good
7.	Clarity of feedback	9	9	9	27	Very Good
8.	Study assistance with the program	10	9	9	29	Very Good

Table 1 shows three class X students in individual trials of interactive learning media for Physics subjects. There are seven assessment indicators which fall into the "very good" category, namely suitability of material, clarity of learning instructions, ease of understanding sentences, ease of understanding learning, accuracy of presentation sequence, clarity of feedback, learning assistance with the program. Meanwhile, the adequacy of training was rated as "good".

Then a small group trial was carried out on 5 people with 2 students who had high achievements, 2 students who had medium achievements, and 1 student who had low achievements. This small group trial data is intended to determine some of the weaknesses or obstacles faced when interactive learning media products for Physics subjects are used. This small group trial is used as an initial experience before the material is tried out in class. The evaluation results of interactive learning media for Physics subjects on the quality aspect of learning materials can be seen in Table 2.

No	Assessment Indicators	Respondents					Total Score	Criteria
		1	2	3	4	5		
1.	Material suitability	10	10	8	9	9	46	Very Good
2.	Clarity of study instructions	9	10	9	10	10	48	Very Good
3.	Ease of understanding sentences	9	9	10	10	10	48	Very Good
4.	Ease of understanding learning	10	10	10	9	10	49	Very Good
5.	Accuracy in the order of presentation	9	10	9	9	9	46	Very Good
6.	Sufficiency of exercise	9	10	9	9	10	46	Very Good
7.	Clarity of feedback	9	9	9	10	9	46	Very Good
8.	Study assistance with the program	10	9	9	9	9	46	Very Good

The assessment of the quality aspect of learning materials for small trials which can be seen in Table 2 shows that overall the assessment indicators fall within the "very good" criteria. This proves that there has been an increase in data.

After a small group trial was carried out, a trial was then carried out in class X, MA Nurul Huda Talang, Saronggi, Sumenep, which consisted of 35 students. Testing in class produces data that will later measure the feasibility of the Macromedia Flash interactive learning media being developed and to find out how beneficial Macromedia Flash interactive learning materials are for students and teachers. The process of trial activities in class X, MA Nurul Huda Talang, Saronggi, Sumenep can be seen in Figure 1 and Figure 2 below.

Figure 1. Group Photo Session with Class X MA Nurul Huda Talang Students, Saronggi, Sumenep

Figure 2. Teaching and Learning Activities for Class X MA Nurul Huda Talang, Saronggi, Sumenep

Then a discussion was held in class with the aim of making students more active and more enthusiastic in teaching and learning activities in class. This discussion session was very interactive and lively. The students in the class had an extraordinary enthusiasm for asking questions about things they did not understand. Many students ask questions that they don't understand. Through this discussion, students can ask or clarify things that are confusing or things that are not yet understood and get answers directly from the presenter with the aim of deepening their understanding. The process of discussion activities in class can be seen in Figure 3.

Figure 3. Q uestion and Answer Session with Class X MA Nurul Huda Talang Students, Saronggi, Sumenep

4. DISCUSSION

From the results of the analysis carried out by Community Servants on students at MA Nurul Huda Talang, Saronggi, Sumenep, Madura, several things emerged. The development of interactive learning media in Physics subjects which has been developed by paying attention to learning aspects has been successfully carried out. This activity was carried out to produce a product in the form of interactive learning media for Physics subjects at MA Nurul Huda Talang, Saronggi, Sumenep, Madura with the aim that students can improve their abilities and interest in teaching and learning activities for Physics subjects. The students were very enthusiastic in participating in the entire series of events. This activity began with a presentation of material by lecturers from Bahaudin Mudhary Madura University (UNIBA) Madura.

The target audience for this service has an educational background, where as an educator you have an obligation to improve quality, especially in the learning process. Based on observations that have been made, one effort to improve the quality of learning is to

create electronic teaching materials using interactive media, namely by creating interactive learning media Macromedia Flash. The results of this observation are in line with the statements of Muhfahroyin et al (2022) and Puspitaloka et al (2021) that electronic teaching materials using interactive media can improve the quality of learning through increasing interest in learning and growing students motivation to be enthusiastic about learning.

The results of this community service prove that the interactive learning media Macromedia Flash in Physics subjects has a very significant influence and has a positive impact on students and teachers at MA Nurul Huda Talang, Saronggi, Sumenep, Madura. Apart from that, the students were very enthusiastic and enthusiastic when the teaching and learning activities were carried out in class using the interactive learning media Macromedia Flash.

The advantages of the macromedia flash interactive learning media created in this activity include that it is easy to operate, can minimize the use of whiteboards and markers, and can foster creativity and innovation in developing teaching materials. This will make it easier for teachers to deliver material and carry out teaching and learning activities. Apart from that, the material can be presented and distributed to students in CD form, so that students can study it repeatedly and students can easily repeat some physics material that they have not understood and do not understand. These results are in line with the statements of Zikra Syah et al (2018) and Novitasari et al., (2020) that interactive media can make the teaching and learning process more interesting because it is easy to operate, students are more motivated and passionate about learning, and teachers can explain lesson material. easier and more attractive so that it is understood by students.

Several studies have been conducted previously by several researchers regarding the effectiveness of using interactive learning media in teaching and learning activities. Komara Komara et al (2017) in their article stated that the results of the research they conducted showed that the tutorial model of interactive learning media had a significant effect on students' critical thinking abilities. Then Riyanto & Greece (2020) in their article stated that based on the results of the research they conducted, video as a tutorial learning medium can currently be categorized as being effectively used to complete learning tools as material for discussion, practice and can improve students' abilities. So, from several previous research results regarding the effectiveness of using interactive learning media in learning activities, it further strengthens the process of community service activities regarding interactive learning media. This community service activity has had many positive impacts on the

students and teachers of Physics subjects at MA Nurul Huda Talang, Saronggi, Sumenep, Madura.

5. CONCLUSIONS AND SUGGESTIONS

Community service activities regarding macromedia flash interactive learning media at MA Nurul Huda Talang, Saronggi, Sumenep, Madura have been successfully carried out and were able to increase students' abilities and interest in teaching and learning activities in Physics subjects. Apart from that, students are also very active and interactive when Macromedia Flash interactive learning media is implemented in class.

The suggestion from the author is that in the future activities like this can continue, of course with better concepts and implementation, so that students will be even more enthusiastic in studying Physics subjects. Apart from that, teachers are expected to continue to update their knowledge and can use this activity as a means of transferring information related to their duties as educators.

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