

Development of Interactive Learning Media Based on PPT Plant Structure Material for Fourth Grade Students

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Abstract: This study was conducted because fourth grade students need media to support their learning outcomes. The purpose of this study is to develop interactive media based on PPT on science lesson material plant structure for Class IV SDN Mentor 1. This type of research is developmental research. This study uses 5 steps of research procedures according to Borg and Gall that have been modified, including: 1) potential and problems, 2) Data Collection, 3) Product Manufacturing, 4) Product Validation, 5) product revision, 6) usage trials. Subjects in this study are students of class IVA SDN Mentor 1. The instrument used in this study is a questionnaire and learning outcomes. The questionnaire was conducted by media experts with a percentage of 97.5%, material experts with a percentage of 95.83%, science learning experts with a percentage of 93.75%, the recapitulation of student responses with a percentage of 99.6%, and for student learning outcomes obtained a percentage of 93.3%. The results showed that Interactive Learning Media based on PPT is included in the category of "very good".

Keywords: Interactive Power Point (PPT), learning outcomes, science

1. Introduction

The rapid pace of Science and technology requires creativity and innovation in learning. Therefore, teachers are required to be able to optimize their ability to operate the tools provided by the school and make good use of them for the learning process. In addition, teachers are also required to develop skills in making learning media that will be used in the teaching-learning process. For this reason,

good knowledge and understanding must be possessed by a teacher (Irfan, 2019).

SDN Mentor 1 is a public elementary school located in Mentor village, Sumberasih District, Probolinggo Regency with a student population of 238. This large number of students attracted the attention of researchers to be able to look further at the existing learning process. Based on the results of observations made by researchers on February 2, 2022, the fourth grade of SDN Mentor 1, which totaled 50 students with a division of 2 parallel classes, experienced problems regarding science learning. Some of them still cannot digest science learning materials well. In addition, the Daily grades obtained by students are less satisfactory. After further review, it turns out that learning media as well as learning resources for fourth grade students are only based on worksheets and packages that have been provided by the school. Even though after the researchers explore, the school infrastructure is quite adequate. Among them there are 1 laptop unit, 1 computer unit, 1 projector unit, and some science media, even almost every teacher has a laptop. But instead of getting an adequate learning process with all the infrastructure that has been available, teachers tend to race on the media package books and worksheets only. So for students, to simply understand the verbal language of the teacher or monotone by only getting references from reading books, researchers think all that is not enough. Students of primary school age still need concrete material to reach their achievement of cognitive

abilities regarding existing subjects, especially Natural Sciences (IPA). Therefore, effective learning media is needed to be able to mobilize students' cognitive abilities and make the learning process more effective and efficient. According to (Anggara, 2019) PowerPoint-based learning Media has been widely developed to improve student cognitive and has been widely developed by researchers.

Reporting from previous research by (Purwanti, L., Widyaningrum, R., & Melinda, S. A., 2020) stated that power point Learning media can attract students learning interests so that they get satisfactory results. The display of learning media that captivates students is certainly important to get the attention of teachers. Power point Media provides the availability of learning media that is interesting but also practical to use. Therefore, to answer the problems that have been described before, teachers at SDN Mentor 1 need other learning media besides racing on reading books, such as interactive Power Point (PPT) Learning Media.

2. Material & Methodology

This research is a development research (Research and Development). This development research uses Borg and Gall type model. According to Sugiyono in (Dewanty, 2017) the steps include: 1) potential and problems, 2. Data Collection, 3. Product Design, 4. Design Validation, 5. Revised Design, 6. Product Testing, 7. Product Revision, 8. Trial Use, 9. Product Revision, 10. Mass Production. But due to time constraints, researchers modifications such as the following figure.



Figure 1. Borg and Gall Diagram on PPT-based interactive learning media

Based on the diagram above explanation for each of the points including: 1) potential and problems explored through a short interview with the fourth grade homeroom teacher. 2) data collection, conducted by conducting observations to determine the learning style of students who will be developed through interactive media based on PPT. 3) the manufacture of this product is made by adjusting the existing plant structure material in learning resources such as package books and worksheets. Next, it will

be inputted into PPT-based interactive media. 4) Product Validation is handled by media experts, material experts, and science learning experts to assess how feasible the media will be developed. 5) revision of the product is carried out if there are still shortcomings or weaknesses that need to be corrected. 6) usage trials are implemented on students to determine the feasibility of products and student learning outcomes after using PPT-

interactive media. For data based interactive media.

This research instrument uses questionnaires and learning outcomes. Questionnaires aimed to determine the response of experts, teachers, and students to the quality of PPT-based collection techniques used qualitative data and quantitative data. Qualitative Data were obtained from comments from experts and teachers of the fourth grade. While quantitative data obtained from scoring according to likert scale by media experts, material experts, class teachers (science learning experts), and scoring using Guttman scale by IVA class students.

3. Results and Discussion

The results of the trial data obtained from data collection conducted based on procedures in research and development. Development research was conducted on April 26 and May 25, 2022 at SDN Mentor 1 which is addressed at Jalan Brawijaya Mentor village, Sumberasih District, Probolinggo Regency. The first step before developing PPT-based Interactive Media, researchers conducted a study of learning media by conducting a short interview with fourth grade teachers before the holding of the study. Then conduct a study of the data. After that, validate media experts, material experts, and Science Learning media Experts. For the final step is to apply the media in the form of research to IVA SDN Mentor class students.



Figure 2. the use of PPT-based Interactive Learning Media

Based on Figure 2 on the use of PPT-based interactive learning media to increase students' interest in learning. Because this medium optimizes the learning style of students. The following is the use of media and the results of the validity level of learning materials and media.

Based on Table 1 the validity level of PPT-based interactive learning media material is 95.83%. Media display, media color attractiveness, media can be used as an alternative to learning, security and convenience of the media, Media spur student learning styles, forms of media can motivate students, images used in the media attractive presentation of the media in accordance with the standards of competence and basic competence, as well as the material used is clear and easy to understand. However, you should still pay attention to writing the dots on the questions and answer options from the pre-test and post-test.

Table 1. Validation Of Material Experts

No	Indicator	Results
1.	Media can be used for Science Learning	4
2.	Media creation attracts students	4
3.	Media is in accordance with the material that must be learned by students	4
4.	Media is in accordance with the applicable curriculum	4
5.	The purpose and benefits of learning are clearly conveyed	3
6.	Content of the material in accordance with Competency Standards (SK)	4
7.	Content of the material in accordance with the basic competence (KD)	4
8.	The contents of the material presented using the appropriate language sengan EYD	4
9.	The content of the material has a correct and precise concept	4
10.	Media involves student participation	4
11.	Media is easy for students to use	4
12.	Users can work on the problem after using the media	3
Percentage		95,83 %

Source: Data Validation Results

Table 2 Results Of Expert Validation Of Materials

No	Indicator	Results
1.	Attractive media display	4
2.	The colors used on the media are attractive	4
3.	Media can be used as an alternative learning	4
4.	Media safe and easy to use	4
5.	Media spur student learning styles	4
6.	Forms of media can motivate students	3
7.	Images used in interesting media	4
8.	Presentation of material in accordance with CompetencyStandards	4
9.	Presentation of the material in accordance with the basic competencies	4
10.	The material used is clear and easy to understand	4
Percentage		97,5 %

Source: Data Validation Results

Based on Table 2 the results of media validity reached 97.5% which means it is valid and does not need revision. However, media experts suggest that the images used in the media for plant structures use images as similar as possible to the original images. So that students can digest the material.

Table 3. Results of the analysis of the level of validity of learning materials and Media

Validator	Results	Suggestion
Material	Vm = 95,83%	Note the writing of the dots on the questions and answer options of the pre-test and post test.
Media	Vd = 97,5%	Images used in media for plant structures use images as similar as possible to the original image. So that student can digest the material.

Source: Data Validation Results

Based on Table 4, the effectiveness of Interactive Learning media based on PPT is 93.3%. From these results it can be seen that 27 fourth grade students of SDN Mentor 1 completed their learning thoroughly. The

minimum completeness criteria (KKM) of individuals in the class is 75. From the level of effectiveness and individual KKM results, plant structure material in science subjects can be said to be effective.

Table 4. Results of the analysis of the level of practicality and effectiveness

Aspects	Subject	Results	Suggestion
Practicality (P2)	Teacher (P1)	93,75%.	Create a fair learning with the needs and capabilities of students.
Effectiveness (E)	Students	93,3%	-

Source: Data Validation Results

4. Conclusion

Based on the results of the validator aspects of the validity and practicality of Interactive Learning Media based on PPT meet the valid aspects (no need for revision). The validation results of teachers and students meet the practical and effective aspects. It can be concluded that PPT-based interactive learning media is feasible to be used as a solution in learning and can improve students cognitive.

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