



## Development of Learning Media to Improve Learning Achievement (Study on Physical Education, Sports and Health (PJOK) Class III Subjects at SD Negeri Kota Bengkulu)

Received : December 25, 2023

Revised : January 08, 2024

Accepted: January 17, 2024

Publish : January 26, 2024

Isratul Hadi\*

### Abstract:

This study set out to identify the phases involved in developing multimedia for PJOK learning, assess the viability of using multimedia in PJOK learning, and evaluate the efficiency of learning media in Class III instruction at Bengkulu City State Elementary School. Bengkulu City State Elementary School class III participated in this study, which employs a development research strategy (Research and Development). The goal of this research on multimedia development is to use Microsoft Office PowerPoint software to create educational materials for Bengkulu City State Elementary School's PJOK Learning program. The methods used to gather data are documentation, assessment questions, surveys, and observation. methods for data analysis applied to the distribution of percentages and scores against preset categories on the rating scale. Learning materials with multimedia included on a CD (compact disk) constitute the study's output. The media expert evaluation yielded an overall percentage of 82.4%, the material expert produced a total percentage of 92.85%, the limited test produced a total percentage of 82.81%, and the widespread test produced a total percentage of 80.1%. This educational tool has demonstrated its ability to raise student learning outcomes. The experimental class had an average score of 80.62, whereas the control class received an average of 76.52. Based on the test findings above, it is possible to infer that the learning media created is useful for raising student learning accomplishment and practical to use as a learning support in PJOK learning.

**Keywords:** Learning Media, PJOK, PowerPoint

## 1. INTRODUCTION

Students pick up knowledge in several ways during the learning process (Puspitarini & Hanif, 2019). This can be traced from diverse cultural backgrounds, both from differences in levels and experiences of movement (Mertha & Mahfud, 2022). Physical education may assist students meet learning objectives in the psychomotor, cognitive, and emotional domains. Variations in PowerPoint presentation can also help students meet these learning objectives (Crittenden et al., 2019).

In the PJOK learning process, the teacher's role is to choose the most suitable and useful learning materials so that students can comprehend the lessons delivered in line with the desired outcomes (Quennerstedt, 2019). The teacher's aptitude and background in learning impact how well he or she can select and deliver the lesson plan (Kosiba et al., 2019). Accordingly, in order to implement the PJOK

learning process, students must be given access to appropriate learning materials that are simple to use and apply, enabling them to master a variety of fundamental motions and movement coordination in an appropriate and accurate manner (Casey & MacPhail, 2018).

Learning media in primary schools in Bengkulu City are still lacking, both in quantity and quality. In addition, teachers' mastery of the utilization of various kinds of media, especially computer-based media, is still lacking, so they haven't been able to make use of the media that is available.

A learning process that takes place will affect the achievement of the learning objectives themselves (Namoun & Alshanjiti, 2021). A quality learning will determine the achievement of maximum learning outcomes (Serevina et al., 2018). Numerous factors affect the attainment of learning outcomes, including such as student competence, learning climate, teacher quality, the media used and the learning material itself (Simamora, 2020). These factors are interrelated and influence each other.

As according to Baber (2020) the factors that determine learning outcomes are: (1) Internal variables include psychological and physiological aspects. The student's physical state, especially their ability to perform bodily functions, are considered physiological variables. Meanwhile, psychological factors are psychological conditions that can affect learning outcomes. The main psychological factors that can affect learning outcomes are student

### Publisher Note:

CV Media Inti Teknologi stays neutral with regard to jurisdictional claims in published maps and institutional affiliations.



### Copyright

©2024 by the author(s).

Licensee CV Media Inti Teknologi, Bengkulu, Indonesia. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution-ShareAlike (CC BY-SA) license (<https://creativecommons.org/licenses/by-sa/4.0/>).

intelligence, motivation, motivation, attitude and talent. (2) External factors, which are divided into social environmental factors and non-social environments. The three social environments that make up the social environment are the home, community, and school settings. Conversely, the material, instrumental, and natural environments comprise the non-social environment. The process of teaching and learning involves communication.

Teaching and learning in the classroom is a communication-rich environment where students and teachers share ideas to advance knowledge (Nortvig et al., 2018). The teacher conveys something or material that is generally unknown to students, and students capture this as new information that they must understand, and in the end teachers and students must show how far the information can be explained well by the teacher and how well students can capture the information that has been conveyed by the teacher (Sailer & Homner, 2020). It is undeniable that in communication, deviations often occur so that communication is less effective and inefficient.

This is partly due to student unpreparedness, lack of student motivation and an unfavorable learning atmosphere. When instructors and students are motivated to participate in these learning activities, communication inside the classroom will function well. Motivation creates spontaneous attention that allows concentration for a long time, thus, motivation is the foundation for concentration.

Considering that media serves as a stimulus presenter and increases information reception in the learning process, using media or props is one technique to encourage students' enthusiasm to study. Further advantages of learning through media include: (1) a more engaging and interactive learning process; (2) more efficient use of instructional time; (3) higher-quality learning for students; and (4) more focused and improved attitudes and attention spans for students learning.

## 2. MATERIAL AND METHOD

### 2.1 Research Time

The research implementation time was May - June 2023 and was conducted at SD Negeri Kota Bengkulu in class III with 71 students divided into 2 classes, one being a control class of 34 students, specifically one experimental class, which had 37 students, and one non-experimental class, which involved teaching utilizing modern learning resources. This learning outcome test stage uses the Pre-test and post-test method to determine the difference in learning outcomes of students who use PJOK learning media with students who do not use PJOK learning media.

### 2.2 Data Collection Method

The methodological basis for this study is research and development (R&D). Utilizing needs analysis study to create certain items is the research and development strategy.

The stages of implementing this development research include problem and potential identification, data collection, product design, design validation, design revision, product trial, product revision, trial usage, mass manufacture, and product revision.

### 2.3 Data Collection Techniques

#### 1. Observation

Observation is carried out in the problem and potential identification stage. Observation is carried out directly to the school where the research is carried out by monitoring the learning process of PJOK learning. This is done so that we get the problems that are really faced in the PJOK learning process in terms of learning media. Observations were also made of the PJOK learning teacher.

#### 2. Questionnaires

Questionnaires are used in several stages of research, namely in the media expert test, material expert test, limited test and test question grids. Through this questionnaire, we can get an assessment, criticism and suggestions regarding the media that has been made from experts.

#### 3. Interviews

Conducting interviews aimed to obtain firsthand feedback about the utilization of educational materials. student interviews as well as instructor interviews' outcomes. Documentation is also used to store data on student test results to be further processed to obtain conclusions.

#### 4. Assessment Scale

The assessment scale is carried out using descriptive quantitative, namely describing engineered media products after being implemented in software, testing the level of validation and feasibility of products to be implemented in PJOK learning.

#### 5. Test

Test questions for students are given in the form of written questions. The questions given to students twice, namely pretest questions and posttest

questions. Pretest questions are given before learning begins to determine the initial state of students. When learning media using PowerPoint have been used in the teaching and learning process in the classroom, posttest questions are administered following an assessment of the learning results. Additionally, classes that did not use PowerPoint-based learning materials received the exam questions. The efficacy of using learning material is then assessed by comparing the test outcomes.

### 3. RESULT AND DISCUSSION

#### 3.1 Learning with Power Point Media to Improve Learning Achievement

The end outcome of product development is learning materials created using Microsoft PowerPoint that follow color and layout guidelines based on design patterns, visual components, and verbal elements. The purpose of Microsoft PowerPoint learning materials is to support and enhance the learning process. When researchers use the product, they will incorporate movies, animations, and graphics into the PowerPoint instructional materials. Students might see things in the curriculum that they have never seen in real life, presented in a realistic way. A sufficiently engaging learning tool for use in the classroom is PowerPoint (Haan & Voort, 2018). By utilizing laptops and LCDs, the learning process becomes interactive because powerpoint learning media can display examples according to the material. The teacher does not need to explain directly, the teacher only needs to record the sound and adjust it to the material to be displayed (Anwar et al., 2020).

Powerpoint learning media before the product test is carried out on students, the validation test is first carried out by 2 validators. The score obtained from the first validator is 3.34 and the score of the second validator is 3.39 with the results of the category very valid or very feasible to use as learning media. The response of students to this powerpoint media is very good, the answer questionnaire indicates that, on average, students enjoy media and receive an average score of 3.47 for the product trial and 3.5 for the use trial. However, when applying powerpoint learning media, there will definitely be shortcomings and advantages that will be faced by researchers. The

5. as: observing, demonstrating and others.

#### 3.2 Learning Media Feasibility Testing

#### 2.4 Research Instrument

Research instruments are used to evaluate the feasibility of the product to be used. The research instruments used are divided into three major groups based on the aspects to be studied, namely: (1) Feasibility test instruments for learning media experts, (2) Feasibility test instruments for material experts, and (3) Empirical test instruments including limited trials and wider trials. The following is a lattice of assessment instruments for each assessor.

advantages of powerpoint learning media are as follows:

1. Learners feel happy because the method during learning is only lecture.
2. Learners can see real objects that they have never seen by showing examples according to the material.
3. There is an interactive between learners and teachers regarding the material displayed.

While the shortcomings in the application of powerpoint learning media are as follows:

1. The availability of tools that are still lacking.
2. The application of material in the form of slides is still difficult to read by students if they are far from the projector.

Powerpoint-based learning media is in accordance with the benefits of the media that have been stated by (Mudinillah, 2019), namely as follows.

1. Students get interested in what they are studying and are therefore more inclined to participate in class activities. What makes students at SD Inpres Paku enthusiastic about learning is that it is the first time they have done learning using Powerpoint-based media.
2. The teaching material presented is clearer because it displays examples in accordance with the material. So that students more easily capture the learning delivered because the examples shown are abstract.
3. The learning method is varied, not just saying words verbally. Learning becomes interesting with activities that display slides with interesting colors and images for students.
4. Learners do more activities, because they not only listen but also do activities such

### 1. Learning Media Expert

The results of the assessment by media experts conducted by Prof. Dr. Johannes Sapri, M.Pd are reviewed from: (1) aspects of the appearance of Microsoft Office PowerPoint learning media 95.45%, (2) aspects of language use 66.66%, (3) aspects of the layout 66.66%, (4) aspects of organization 95.84%. Overall, the assessment of media experts on learning media with PowerPoint in PJOK learning is 89.81%. So that the level of display validation on learning media with PowerPoint in PJOK learning is interpreted as very feasible to use. The next assessment by media experts conducted by Dr. Alexon, M.Pd is reviewed from: (1) aspects of the appearance of Microsoft Office PowerPoint learning media 68.18%, (2) aspects of language use 79.16%, (3) aspects of appearance 87.5%, (4) aspects of organization 75%. Overall, the assessment of media experts on learning media with PowerPoint in PJOK learning is 75%. So that the level of display validation on learning media with PowerPoint in PJOK learning is interpreted as feasible to use.

### 2. Material Expert

The results of the assessment for material experts in terms of: (1) The quality of the material received an assessment of 94.44%, and (2) The usefulness of the material received an assessment of 90%. Overall, the assessment of the material expert on learning media with PowerPoint on PJOK learning is 90.85%. So that the level of validation of material on learning media with PowerPoint in PJOK learning is interpreted as very feasible to use.

### 3. Limited Testing

The results of the limited test assessment for students in terms of: (1) The appearance of the media received an assessment of 88.61%, and (2) The usefulness of the media received an assessment of 75.35%. Overall, the limited test assessment of learning media with PowerPoint in PJOK learning amounted to 82.81%. So that in limited testing on learning media with PowerPoint on PJOK learning is interpreted as very feasible to use.

### 4. Extensive Testing

The results of the limited test assessment for students in terms of: (1) The appearance of the media received an assessment of 83.70%, and (2) The usefulness of the media received an assessment of 75.47%. Overall, the broad test assessment of learning media with PowerPoint in PJOK learning amounted to 80.10%.

In the broad test there was an increase in the assessment by students, so that it was in the category of very feasible to use.

### 5. Testing The Validity of Questions

Testing the validity of the question instrument in this study was carried out with a type of rational validity. The structure of the questions is based on the established success criteria and fundamental abilities. A professor with expertise in the subject matter then reviewed the questions and content in this learning resource. The result is that the questions presented are feasible and logical in accordance with the material, but there are some writing techniques that need improvement.

Considering the results of the feasibility test of the previously described PowerPoint learning resources, the evaluation by material experts receives a total assessment of 90.85%, while the evaluation by learning media experts receives a total assessment of 89.70%. Although still included in the very feasible category, there is a significant difference in assessment results. This is likely due to bias in the assessment instrument. The media expert lecturers and material experts gave an assessment based on the correctness of the PowerPoint and the correctness of the material in the media. The evaluation's findings show that the PowerPoint-based learning resources from this material production and media presentation are of high quality.

### 3.3 Feasibility of Media in Physical Education Learning in Elementary Schools

In order to assess the effectiveness of the PowerPoint teaching materials, the learning process employed an experimental paradigm to compare the learning results of students in the experimental class with the control class. The control group received instruction through lecture, Q&A, and discussion. The PJOK handout and the chalkboard served as the learning tools. Everything about learning in the experimental class is essentially the same as it is in the control group; the primary medium is a viewer that shows the created PowerPoint learning materials, with the blackboard serving as the supporting medium. The pretest and posttest questions were given to the experimental class and the control class in exactly the same way. Accurately measuring the learning success difference between classrooms that use PowerPoint learning tools and those that don't is the aim of this.

It is possible to compare since the difference is not statistically significant. The experimental class

pretest has an average value of 55.37, whereas the control class pretest has an average value of 53.76. After the lecture, there is a posttest in which both the experimental class and the control class take part. The experimental class posttest had an average value of 80.62, whereas the control class posttest had an average value of 76.52. Both the experimental class and the control class saw a rise in average scores. In contrast, the average value increased more in the experimental class compared to the control class. So, the use of learning media with PowerPoint in learning PJOK has an effect on improving student learning achievement.

#### 4. CONCLUSION

The conclusions that can be drawn from this research are:

1. Research on the development of PJOK learning media with powerpoint media for class III SD Negeri 38 Bengkulu City was developed based on ADDIE development steps in R&D research. The way of developing learning media carried out by researchers is by introducing powerpoint-based media to students, after which researchers conduct a needs analysis, with the collection of data, researchers develop PJOK learning media powerpoint media by adding hyperlinks, videos, emoticons that make students interesting to follow learning.
2. According to the assessment provided by learning multimedia experts, which yielded a total percentage of 89.81% and 75%, learning multimedia using PowerPoint for PJOK learning that is designed is extremely practicable to use to assist physical education learning. According to the material expert, the total percentage obtained was 90.62%, and in the limited test obtained a total assessment of 82.81%, while in the broad test obtained a total assessment of 80.10%. According to the percentage of material and media specialists surveyed, using the learning media with PowerPoint produced as a support for PJOK learning is very possible.
3. Students taught using learning media with PowerPoint and those who did not have the opportunity to utilize it have their learning results compared in an experimental manner as part of the trial use of this learning medium. The end effect is a difference in average scores: the average score for the experimental class is 80.62, compared to 76.52 for the control group. So that learning media with PowerPoint in PJOK

learning is feasible to improve student learning achievement.

#### AUTHOR INFORMATION

##### Authors

Isratul Hadi, Fakultas Keguruan dan Ilmu Pendidikan, Universitas Bengkulu, Indonesia

 <https://orcid.org/0009-0007-6843-5018>

Email: [isratulhadi12051983@gmail.com](mailto:isratulhadi12051983@gmail.com)

#### REFERENCE

- Anwar, Z., Kahar, M. S., Rawi, R. D. P., Nurjannah, Suaib, H., & Rosalina, F. (2020). Development of Interactive Video Based Powerpoint Media In Mathematics Learning. *Journal of Educational Science and Technology (EST)*, 6(2), 167–177. [Google Scholar](#)
- Baber, H. (2020). Determinants of students' perceived learning outcome and satisfaction in online learning during the pandemic of COVID19. *Journal of Education and E-Learning Research*, 7(3), 285–292. <https://doi.org/10.20448/journal.509.2020.73.285.292>
- Casey, A., & MacPhail, A. (2018). Adopting a models-based approach to teaching physical education. *Physical Education and Sport Pedagogy*, 23(3), 294–310. <https://doi.org/10.1080/17408989.2018.1429588>
- Crittenden, W. F., Biel, I. K., & Lovely III, W. A. (2019). Embracing Digitalization: Student Learning and New Technologies. *Journal of Marketing Education*, 41(1), 5–14. <https://doi.org/10.1177/0273475318820895>
- Haan, R.-J. den, & Voort, M. C. van der. (2018). On evaluating social learning outcomes of serious games to collaboratively address sustainability problems: A literature review. *Sustainability (Switzerland)*, 10(12), 1–26. <https://doi.org/10.3390/su10124529>
- Kosiba, G., Gacek, M., Wojtowicz, A., & Majer, M. (2019). Level of knowledge regarding health as well as health education and pro-health behaviours among students of physical education and other teaching specialisations. *Baltic Journal of Health and Physical Activity*, 11(1), 83–95. <https://doi.org/10.29359/BJHPA.11.1.09>

- Mertha, I. W., & Mahfud. (2022). History Learning Based On Wordwall Applications To Improve Student Learning Results Class X IPS In MA As'adiyah Ketapang. *International Journal of Educational Review*, 2(5), 605–612. [Google Scholar](#)
- Mudinillah, A. (2019). The Development of Interactive Multimedia Using Lectora Inspire Application in Arabic Language Learning. *Jurnal Iqra': Kajian Ilmu Pendidikan*, 4(2), 285–300. <https://doi.org/10.25217/ji.v4i2.570>
- Namoun, A., & Alshantiti, A. (2021). Predicting student performance using data mining and learning analytics techniques: A systematic literature review. *Applied Sciences (Switzerland)*, 11(1), 1–28. <https://doi.org/10.3390/app11010237>
- Nortvig, A.-M., Petersen, A. K., & Balle, S. H. (2018). A Literature Review of the Factors Influencing E-Learning and Blended Learning in Relation to Learning Outcome, Student Satisfaction and Engagement. *The Electronic Journal of E-Learning*, 16(1), 46–55. [Google Scholar](#)
- Puspitarini, Y. D., & Hanif, M. (2019). Using Learning Media to Increase Learning Motivation in Elementary School. *Anatolian Journal of Education*, 4(2), 53–60. [Google Scholar](#)
- Quennerstedt, M. (2019). Healthying physical education - on the possibility of learning health. *Physical Education and Sport Pedagogy*, 24(1), 1–15. <https://doi.org/10.1080/17408989.2018.1539705>
- Sailer, M., & Homner, L. (2020). The Gamification of Learning: a Meta-analysis. *Educational Psychology Review*, 32(1), 77–112. [Google Scholar](#)
- Serevina, V., Sunaryo, Raihanati, Astra, I. M., & Sari, I. J. (2018). Development of E-Module Based on Problem Based Learning (PBL) on Heat and Temperature to Improve Student's Science Process Skill. *TOJET: The Turkish Online Journal of Educational Technology*, 17(3), 26–36. [Google Scholar](#)
- Simamora, R. M. (2020). Studies in Learning and Teaching Studies in Learning and Teaching The Challenges of Online Learning during the COVID-19 Pandemic: An Essay Analysis of Performing Arts Education Students. *Studies in Learning and Teaching*, 1(2), 86–103. <https://doi.org/10.46627/silet.v1i2.38>