



Development of Student Worksheets (LKPD) PJOK Pencak Silat Based on Qr-Code

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Abstrak

The lack of teaching materials for Pencak Silat and several movements in the Physical Education, Sports, and Health (PJOK) textbook is needed by teachers. This research aims to produce a Student Worksheet (LKPD) for PJOK Pencak Silat based on QR codes for 7th-grade students and assist PJOK teachers in facilitating PJOK learning, specifically in Pencak Silat. The method used in this research is Research and Development, using the Borg and Gall method. The subjects of this study were 7th-grade students in junior high school. The research instruments used were media assessment, material assessment, and teacher assessment. Based on the results of the assessment of the QR code-based LKPD for PJOK Pencak Silat by media experts, subject experts, and PJOK teachers, it obtained feasibility values of 89.3%, 80%, and 83.3% with the criteria of Very Feasible, Feasible, and Very Feasible, with an average assessment of 84.2%. Based on the description, it can be concluded that the QR code-based LKPD for PJOK Pencak Silat developed by the researchers is highly feasible to use. The researcher also tested the reliability of the Pencak Silat LKPD instrument using the K-R 20 formula and obtained a result of $r_{11} = 0.864$, which is greater than the r -table value of 0.234. This research resulted in a QR code-based LKPD for PJOK Pencak Silat that is suitable for use and can help PJOK teachers facilitate PJOK learning, particularly in the Pencak Silat subject.

Keywords: Pencak Silat, LKPD, *Qr-Code*

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A. Introduction

Education is one conscious effort to

consciously change human behavior, both individually and collectively, in order to enhance human resources through teaching efforts (Minarsih, 2022). One of the key factors in improving the quality of human resources is education. Well-implemented education will have a positive impact on national development. In (Government of Indonesia, 2021), it is stated that education is a conscious and planned effort to create a learning atmosphere and learning process in which students actively develop their potential to have spiritual, self-control, personality, intelligence, noble character, and skills needed for themselves and society, and to develop all the potential possessed by students through the learning process. To achieve the goals of national education, there is a need for mature efforts in planning, approaches, and effective strategies. The national education system is still regulated by curriculum regulations. The 2006 curriculum, the 2013 curriculum, and the independent curriculum at the Junior High School (SMP) level include martial arts activities that are already listed in the syllabus. One of the martial arts included in the curriculum is Pencak Silat because it is a typical Indonesian martial art (Adeyansyah et al., 2021; Rahayu et al., 2022).

Pencak Silat plays a significant role in improving the attitudes, mentality, and quality of the younger generation (Kholis,

2017) and (Saleh & Widiyanto, 2019). This is undoubtedly related to the goal of sustainable development of the younger generation, making Pencak Silat an opportunity for educational institutions to contribute to improving the quality of students through training in mental attitudes and discipline, thus producing a young generation with a warrior spirit. In addition, Pencak Silat is also a character-building activity, as can be seen in the learning or training process (Saleh & Widiyanto, 2020).

Based on interviews with PJOK teachers at MTS Baitussalam and MTS Jamiyyatul Muta'allimin, the Pencak Silat learning materials are combined with the PJOK textbook, and there are no Student Worksheets (LKPD) for Pencak Silat in those schools. During the learning process, students still use the textbook, but the number of textbooks is only half the number of students in the class, resulting in suboptimal learning. In addition, the content of the Pencak Silat material in the textbook has several shortcomings, including:

- a) The explanations in the textbook for certain movements are unable to present the movements effectively because the textbook only contains illustrations without accompanying explanations.
- b) There is no explanation regarding the

trajectory in the textbook, such as the trajectory of a straight front punch.

- c) There is no explanation regarding the target and purpose in the PJOK textbook, such as the target of a front punch being the solar plexus and its purpose being to attack the opponent.

Based on the results of interviews with both PJOK teachers and the analysis of the PJOK textbook, there is a need for the development of teaching materials in the form of Student Worksheets (LKPD). Therefore, the researcher developed Student Worksheets (LKPD) to serve as a guide for teachers in teaching, so as not to rely solely on the textbook/martial arts teaching materials. One of the efforts to support the ability to understand Pencak Silat learning materials is by using Student Worksheets (LKPD), as LKPD is one of the components of learning to achieve learning objectives. These LKPDs contain Pencak Silat materials used in Junior High School (SMP) and will be utilized in the respective schools. There is a need for innovation in the field of education, particularly in development within schools. One of these innovations is the use of QR codes as a supplementary tool.

QR code is a two-dimensional matrix image that has the ability to store data within it. According to Hartoto, Mulyono, & Syafutra (2021), the presence of QR

codes as an additional tool allows for more extensive and informative module materials.

It is known that every individual born into the world has their own uniqueness, characterized by different brain processing, absorption, and communication abilities. Learning is not just about memorization; many things can be forgotten within hours, meaning they are not always permanent.

Based on the aforementioned background, the author proposes a research titled "Development of Student Worksheets (LKPD) for Pencak Silat Based on QR Code in Junior High School (SMP) Grade VII."

B. Method

The research method used in this study is research and development (R&D) with the Brog and Gall model. The stages of the Brog and Gall method consist of 10 steps, starting from: (1) research and data collection, (2) planning, (3) developing draft products, (4) preliminary field testing, (5) revising the test results, (6) field implementation testing, (7) product refinement, (8) field implementation testing, (9) final product refinement, and (10) dissemination and implementation.

Data Collection Technique

The data collection technique used in this study is qualitative data, which is obtained

from the Student Worksheets (LKPD) PJOK Pencak Silat Based on QR Code questionnaire sheets. The purpose of using this technique is to obtain an overview of the development of LKPD PJOK Pencak

Silat Based on QR Code. The questionnaire serves as an instrument to test the validity of the teaching materials and uses a Likert scale questionnaire with a range of 1-5.

Table 1. Scoring Categories

Category	Score
Very Good	5
Good	4
Quite Good	3
Not Good Enough	2
Very Good	1

Source: Sugiyono (Nazli, 2021)

The formula used to calculate eligibility percentage is:

$$Value = \frac{Score}{Maximum\ Score} \times 100\%$$

Table 2. Eligibility Assessment Criteria

Score in percent (%)	Criteria
< 21%	Very Unworthy
21% -40%	Not feasible
41-60%	Decent Enough
61-80%	Worthy
81-100%	Very Worth it

Source : Arikunto (Nazli, 2021)

After scoring, the next step is to calculate the percentage of student responses to the

LKPD as follows:

Category	Criteria
Strongly Agree	5
Agree	4
Uncertain	3
Disagree	2
Strongly Disagree	1

$$K = \frac{f}{N \times I \times R} \times 100\%$$

Explanation:

K = Student Response

F = Number of Respondents

N = Highest Score

I = Number of Items

R = Number of Respondents

Based on these calculations, the students' responses to LKPD are percentages and questionnaire criteria for vulnerable.

Table 3. Percentage Range and Student Response Criteria

Presentation Range	Criteria
80% - 100%	Very good
66% - 80%	Good
56% - 65%	Pretty good
40% - 55%	Not good
30% - 39%	Not good

Source : Arikunto (dalam Nazli, 2021)

From the results of the validity test that has been carried out, the questionnaire used is valid because in the power questionnaire validity test criteria it is said

to be valid if the significant value is less than 0.05

Cronbach's Alpha N of Items	Cronbach's Alpha N of Items
0.707	12

C. Result and Discussion

Analysis Data

The analysis of needs in this research is based on the analysis of the deficiencies in Pencak Silat teaching materials and the analysis of deficiencies in the PJOK textbook. The researcher developed the Student Worksheet (LKPD) to be used as a guide for teachers in teaching to avoid a lack of textbook/Pencak Silat teaching materials. One of the efforts to support the ability to understand Pencak Silat learning materials is by using the Student Worksheet (LKPD), as it is one of the components of learning to achieve learning

objectives. This LKPD contains Pencak Silat materials for Junior High School (SMP) students and will be used in the school.

Product Design

First Stage

The material used in the sub-topics about specific martial arts movements is collected from various sources, including books and the internet. The material consists of relevant content and illustrations.

Second Stage

The design involves presenting specific

martial arts movement materials in the form of videos accessible through barcodes. The LKPD uses simple language to ensure that participants can easily understand the content.

Third Stage

The components from the first stage, including the front and back covers, preface, core competencies, learning indicators and objectives, instructions for use, table of contents, materials and videos, learning exercises, summary of materials, and bibliography, are combined.

Fourth Stage

The final stage involves adjusting the size of the Student Worksheet (LKPD) PJOK Pencak Silat Based on Qr-Code.

Product Validation

Before conducting a small-scale test, it is necessary to validate the design model of the Student Worksheet (LKPD) PJOK Pencak Silat Based on Qr-Code by experts in their respective fields. The researcher involves three individuals in this validation: a media expert,

Mr. Arif Yudianto, M.Pd., a subject matter expert, Mrs. Hasanah, SE, and a teacher, Ms. Tasya Suhandi Putri, S.Pd.

In this stage, an initial draft of the Student Worksheet (LKPD) PJOK Pencak Silat Based on Qr-Code is provided along with an evaluation sheet for the media expert, subject matter expert, and teacher. The evaluation sheet consists of questions that assess the quality of the LKPD, including suggestions and comments from the experts and teacher regarding the Student Worksheet (LKPD) PJOK Pencak Silat Based on Qr-Code. The evaluation uses a Likert scale ranging from 1 to 5.

Description of Expert Validation Data

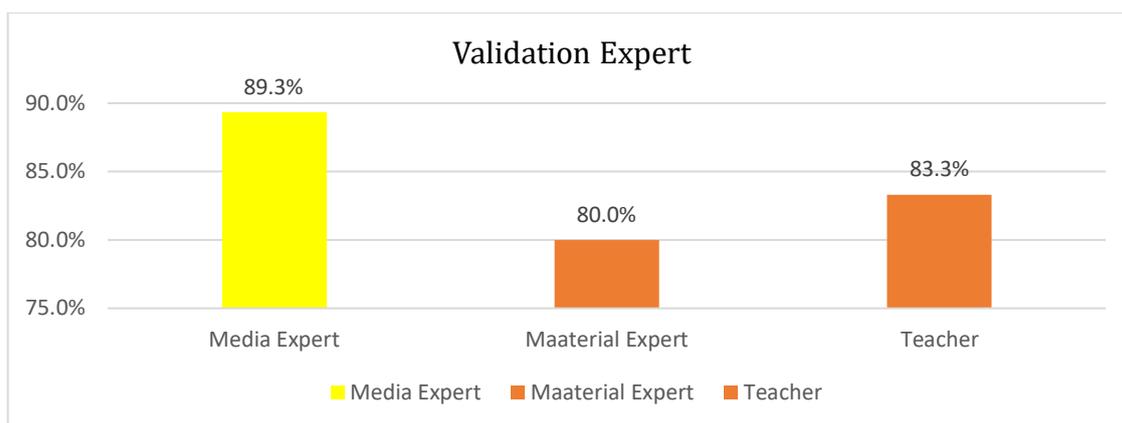
The data obtained from the evaluation sheets filled out by the experts and PJOK teachers are used to determine whether the Student Worksheet (LKPD) PJOK Pencak Silat Based on Qr-Code can be used for small-scale and large-scale tests. The following are the results of the evaluation sheets filled out by the experts and PJOK teachers.

Table 4.1 The average score of the assessment scores of experts and teachers

No	Expert	percentage results	Category
1	Media Expert	89,3 %	Very Worth it
2	Material Expert	80 %	Worthy
3	Teacher	83,3 %	Very Worth it
	Average	84,2 %	Very Worth it

Source: Result (2023)

Figure 1. Explains The Percentage Of Experts And Teachers Diagram



Revision of Design Before Small-Scale Testing

Based on inputs and suggestions from experts and PJOK teachers, the researcher made revisions to the Student Worksheet (LKPD) PJOK Pencak Silat Based on Qr-Code, which will be tested on a small scale.

Preliminary Field Testing

In the preliminary field testing phase, 10 seventh-grade students from Mts Jamiyyatul Muta'allimin achieved a percentage score of 90.3%. Thus, the LKPD can be categorized as excellent.

Revision of LKPD After Preliminary Field Testing

Based on the results of the LKPD's preliminary field testing, no obstacles were found during the implementation of the learning process. Therefore, the researcher will proceed with the preliminary field testing.

Field Implementation Testing

Based on the preliminary field testing and evaluation, the field implementation testing was conducted by 23 students from the seventh grade of MTs Jamiyyatul Muta'allimin. The field implementation testing achieved a percentage score of 87.5% with an excellent rating.

Main Field Testing

Building upon the preliminary field testing, field implementation testing, and evaluation, the researcher proceeded with the main field testing. The main field testing was conducted by 38 students from the seventh grade of MTs Baitussalam, obtaining a percentage score of 88.1% with an excellent rating.

Final Product

Based on the assessment of the PJOK Pencak Silat LKPD based on Qr-Code by media experts, subject matter experts, and PJOK teachers, the feasibility scores obtained were 89.3%, 80%, and 83.3%,

respectively, categorized as Highly Feasible, Feasible, and Highly Feasible. Based on these descriptions, it can be concluded that the PJOK Pencak Silat

LKPD based on Qr-Code developed by the researcher is suitable for use.

Figure 2. Evidence of Floating



LKPD instrument reliability test results

$$r_{11} = \left(\frac{k}{k-1} \right) \left(1 - \frac{\sum \sigma b^2}{\sigma_t^2} \right)$$

$$r_{11} = \left(\frac{12}{12-1} \right) \left(1 - \frac{4.07}{11.58} \right)$$

$$r_{11} = 0.864$$

If the result of $r_{11} = 0.864$ is consulted with the product-moment correlation coefficient table with degrees of freedom ($df = N-2 = 71-69 = 69$), and a significance level of 5%, we obtain the $r\text{-table} = 0.234$. The decision

is made by comparing $r_{11} = 0.864$, which is greater than the $r\text{-table}$.

Decision rule: If $r_{11} > r\text{-table}$, it means the data is reliable, and if $r\text{-table} < r_{11}$, it means the data is unreliable.

Conclusion: Since $r_{11} = 0.864$ is greater than $r\text{-table} = 0.234$, it can be concluded that all data analyzed using the alpha method is reliable.

D. Conclusion

Based on the results of the conducted research, the following conclusions can be drawn: The suitability of the Student Worksheet (LKPD) for Physical Education

and Health (PJOK) based on Qr-Code technology for Pencak Silat is deemed appropriate for use by students. This conclusion is based on the data analysis results obtained from media experts, which yielded a suitability percentage of 89.3%, while material experts assessed it as 80% suitable, and PJOK teachers evaluated it as 83.3% suitable. According to the predetermined criteria, the development of the PJOK Pencak Silat LKPD based on Qr-Code has met the criteria of being "Highly suitable" and suitable for use. The development of the Student Worksheet (LKPD) for PJOK Pencak Silat based on Qr-Code can now be utilized by students. This is supported by the analysis of the initial field trial, which obtained a percentage of 90.3% with an assessment of "Excellent," the implementation of field trials achieving a percentage of 87.5% with an assessment of "Very good," and the main field trial resulting in an assessment of "Very good."

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F. Conflict of Interest

No Conflict of Interest

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