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Project-Based Learning Oriented E-Worksheets with QR Code Packaging: Validity and Practicality

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ABSTRAK

Minimnya penggunaan lembar kerja peserta didik yang inovatif membuat proses pembelajaran menjadi kurang efektif karena tidak memfasilitasi proses belajar peserta didik dengan baik. Penelitian ini bertujuan untuk mendeskripsikan rancang bangun, validitas dan kepraktisan terhadap lembar kerja peserta didik elektronik berorientasi Project Based Learning dengan kemasan QR Code pada Muatan IPAS kelas empat sekolah dasar. Penelitian ini menggunakan model ADDIE (analysis, design, development, implementation, evaluation). Metode pengumpulan data dilakukan dengan observasi, wawancara, studi dokumen, dan kuesioner. Teknik analisis data menggunakan analisis deskriptif kuantitatif dan analisis deskriptif kualitatif. Hasil penelitian pengembangan lembar kerja peserta didik elektronik ini yaitu: rancang bangun lembar kerja peserta didik elektronik berorientasi Project Based Learning dengan kemasan QR Code pada muatan IPAS kelas empat sekolah dasar, lembar kerja peserta didik elektronik dinyatakan valid dan layak berdasarkan perolehan indeks validitas sebesar 0,90 dan analisis kelayakan ahli media memperoleh indeks validitas 0.88, dan termasuk ke dalam rentang ≥ 0,8 artinya produk yang dikembangkan termasuk ke dalam validitas tinggi. Berdasarkan hasil tersebut, dapat disimpulkan bahwa lembar kerja peserta didik elektronik berorientasi Project Based Learning dengan kemasan QR Code pada muatan IPAS kelas empat sekolah dasar sudah valid dan layak digunakan dalam proses pembelajaran.

ABSTRACT

The lack of use of innovative student worksheets makes the learning process less effective because it does not facilitate the student learning process properly. This study aims to describe the design, validity and practicality of electronic student worksheets oriented towards Project Based Learning with QR Code packaging on the fourth grade elementary school science content. This study uses the ADDIE model (analysis, design, development, implementation, evaluation). Data collection methods are carried out by observation, interviews, document studies, and questionnaires. Data analysis techniques use quantitative descriptive analysis and qualitative descriptive analysis. The results of this electronic student worksheet development research are: the design of electronic student worksheets oriented towards Project Based Learning with QR Code packaging on the fourth grade elementary school science content, electronic student worksheets are declared valid and feasible based on the validity index of 0.90 and the feasibility analysis of media experts obtained a validity index of 0.88, and is included in the range ≥ 0.8 meaning that the product developed is included in high validity. Based on these results, it can be concluded that the electronic student worksheet oriented towards Project Based Learning with QR Code packaging on the fourth grade elementary school science content is valid and suitable for use in the learning process.

1. INTRODUCTION

The learning process in schools teachers must be able to manage the teaching and learning process so that students can learn optimally without any doubts during the learning process. In learning activities, it can be interpreted as delivering a message through communication activities or using certain media to information recipients (Carrero-Planells et al., 2021; Stevenson et al., 2020). In the learning process in class, students have different characteristics so that teachers continue to use the curriculum according to their

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grade level (Duruk et al., 2017; Lavasani & Khandan, 2011). With the advancement of the era or era of technology, news and knowledge, the quality of education also needs to be improved. This situation requires students to have the ability to think critically and solve problems in the learning process. Some variables that are very influential in the realization of a learning and teaching activity are students, teachers, curriculum, learning resources and learning environment (Azizah et al., 2018; Sa'ida, 2021).

Science learning is a science that studies everything that includes all events in understanding the universe and as a field of study that studies natural events to be used as material in acquiring knowledge in elementary school. Science learning in elementary schools should be more liberating for students in making and interpreting certain things in learning activities that will lead students to draw conclusions independently. Students are expected to be able to produce a work independently but meaningfully after understanding and following the IPAS learning process. In carrying out science learning in elementary schools, skills are needed in analyzing a problem encountered (Citrawathi et al., 2016; Egok & Hajani, 2018; Meilani & Aiman, 2020). When carrying out the IPAS learning process on natural resource materials, students tend to be passive. This can be seen when the teacher discusses the material, students seem less active. Teacher creativity in teaching is very influential on student behavior. Learning media also greatly determines student success in achieving learning targets. Learning media really allows students to develop their knowledge and is able to improve students' skills for the development of their thinking Learning media is a component of learning resources in the form and type of learning media that will be used by teachers in providing knowledge to students with technological advances in the learning process (Nugroho et al., 2019; Setiawardhani, 2013).

Based on the results of interviews with the principal and Class IV teachers, the number of grade IV students, namely 26 students during the learning process, 18 students seemed less excited, easily bored, and had difficulty maintaining focus while in class. This condition can be caused by several factors, including limited school facilities and infrastructure, for example, judging from the facility session, it only has 4 projectors from 12 classes that include assistance from boss funds, while in terms of infrastructure, the playing field is less extensive so that there are limited students in playing, lack of teacher competency development efforts in applying effective or powerful learning models or methods, for example, teachers use the lecture method in learning that makes students not interested in learning, feel bored so that the learning carried out in class is not effective, the limited available learning resources such as package books used during the learning process are not enough so 1 package book is used by 2 students, and low structural skills in applying available technology examples of lack of teacher skills in developing teaching-based materials. This is because it takes some time to make electronic-based teaching materials and teachers tend to use the package books provided. Students only seem to engage with 1 or 2 people during the learning process. According to the grade IV teacher at SD N 1 Semarapura Kelod, the level of ability of students is still lacking when participating in classroom learning can be seen by the number of grade IV students, namely 26 students, where only 8 students can get scores above KKTP which is 80 - 95 and 18 students who get scores below KKTP while the value obtained by students below KKTP is from 65 - 72. While KKTP from class IV is 75.

In the above problem, the lack of interesting learning methods used by teachers can cause the learning process to be ineffective then from these problems. Proper use of learning media, such as LKPD, can be an efficient step (Pradiptha & Wiarta, 2021). Based on the definition from other study LKPD is a number of materials or topics that are structured to produce a suitable learning environment or environment for students (Ansyah et al., 2021). One type of LKPD that can be used as an effort to attract students' attention during the student learning process is electronic LKS, which is often referred to as E-LKPD. Learning media such as E-LKPD that were developed have been widely researched and developed by previous researchers (Adilla et al., 2019). E-LKPD is a guide or guideline that can be used by students in investigating and overcoming problems. The development of learning media research that I made has the latest from previous researchers, in the E-LKPD that I made made with QR Code packaging to access and open E-LKPD (Eva et al., 2020; Halili, 2019).

PJBL-oriented E-LKPD with QR Code packaging is an electronic or digital guideline that can be used by students in the implementation of project-based science learning activities. QR Code is one of the technology-based learning media. According to previous study QR Codes were developed as codes that allow their content to be translated at high speed (Halili, 2019). QR Codes can easily access data quickly, and can be read with a smartphone. Students can complete the exercise independently with the help of PJBL-oriented E-LKPD with QR Code packaging, which includes instructions for certain stages. Through PJBL-oriented E-LKPD with QR Code packaging, students can be directly involved and can carry out the learning process independently in learning materials. Based on the problems encountered in the field, solutions can be developed from these fields by developing learner activities with PJBL-oriented E-LKPD with QR Code packaging, with the development of E-LKPD students will not feel bored during the learning

process, besides that E-LKPD is also easily accessible, and also practical (Fajriyanti et al., 2018; Sari et al., 2020).

From the presentation of the problems that have been presented, as for the needs analysis that can be developed in the context of the previous background, several issues can be identified that will be explored in this study, namely some students have not met the minimum completeness standards in their learning outcomes, limited in the development of learning media, which results in a lack of student learning encouragement, besides that students also do not focus on following. The learning process is owned by students but only a few students are able to answer the questions given by the teacher and students there is no reciprocity to the teacher If the situation continues like this while the teacher does not encourage students to actively participate in the learning process, it is likely that there will be no students who then succeed in their lessons (Hekmah et al., 2019; Susilowati, 2017).

With the use of this project-based model, grade IV students are able to improve higher-order thinking patterns which are very effective in elementary schools because in this E-LKPD media a learning video, observation activities and problems that will be found by students. Learning media such as E-LKPD oriented Project Based Learning (PJBL) are used to attract students in the presentation in the video, and also projects that will be carried out by students that can provide real situations about natural resource materials to grade IV students (Saputra & Sujarwanta, 2021; Surya et al., 2018). The results of research written by previoius study utilization of Project-based Electronic Student Worksheets (E-LKPD) show that E-LKPD can be used as learning material using the 4D Model (Ayuditiasni Dewi et al., 2023; Nabela & Bayu, 2022). So the results of the research conducted show material validation, media validation is declared valid, media practicality is obtained from teacher questionnaires and students get "Very Practical" criteria, and media effectiveness is obtained from student test results that show all of them have increased in value so that they are declared "Very Effective". In addition, the results of research written by other study revealed that the application of Project-Based Learning Electronic Student Worksheets (E-LKPD) using the ADDIE Model stated that his research had succeeded in increasing student learning motivation by 62.5% in the high category, and student learning outcomes increased by 87.5% (de la Peña et al., 2021; Piotrowska et al., 2022).

The development of LKPD using QR Codes can utilize smartphones as a learning medium and change negative perceptions about smartphones that are usually used by students to play games, selfies and watch movies, but by using a learning system with QR Code packaging, students can use smartphones into more positive things and make smartphones as a learning tool. Many applications are now available in one hand, making it easier to find the information needed. By developing PJBL-oriented LKPD with QR Code packaging, it is hoped that students will be able to learn the material easily in learning activities and form effective interactions between students and educators, so that student learning achievement activities can be further increased. This study aims to describe the design, validity and practicality of electronic student worksheets oriented towards Project Based Learning with QR Code packaging on the fourth grade elementary school science content. The novelty of QR Codes is developed as a code that allows content to be translated at high speed

2. METHOD

In research on the development of E-LKPD learning media oriented to the Project Based Learning (PJBL) model with QR Code packaging, the ADDIE model is used. The ADDIE model is a learning model design that develops research systematically to help solve problems in learning related to learning resources according to student characteristics. The ADDIE model consists of five steps: analysis, design, development, implementation, and evaluation (Noviyanti & Gamaputra, 2020).

In the analysis stage, there are several types of analysis consisting of needs analysis, competency analysis, analysis of characteristics possessed by students. The following stages are as follows: (1) Analysis of the need to make observations at SD N 1 Semarapura kelod by conducting interviews with grade IV teachers regarding things needed in the learning process, especially in science subjects; (2) Analysis of competencies achieved by students is carried out by examining learning objectives (TP), indicators of competency achievement and subject matter. The purpose of this is for E-LKPD learning media oriented to the Project Based Learning (PJBL) model with QR Code packaging developed in accordance with the existing curriculum; and (3) Analysis of student characteristics is carried out with the aim of determining the level of abilities, knowledge, attitudes and skills possessed by grade IV students of SD N 1 Semarapura kelod.

The subject in this study was using the judges test, while the judges used by 2 material experts and 2 media experts. The object of the trial in this development research is the validity, and practicality of the E-LKPD media oriented to the Project Based Learning (PJBL) model with QR Code packaging on Natural and Social Sciences (IPAS) Subjects Natural Resources Material. In this study, a non-test method was used in the

form of giving questionnaires in data collection. The data analysis techniques used in this study are qualitative descriptive statistical analysis techniques and quantitative descriptive statistical analysis. The grid of research instruments can be seen in Table 1, Table 2, Table 3, and Table 4.

Table 1. Material Expert Instrument Grille

No.	Aspects	Indicator	Item Number
1	Curriculum	Conformity of the material to basic competencies.	1
		Suitability of the material to learning indicators.	2
2	Materi/Daddy	The truth of matter.	3
		Accuracy of matter.	4
		The depth of the material.	5
		Suitability of the material to the characteristics of students.	6
		Clarity of the material.	7
3	Grammar	Consistent use of language.	8
		The language used is in accordance with the characteristics of students.	9
		Ease of using the language	10
		Sentence effectiveness.	11

Table 2. Media Expert Instrument Grille

No.	Aspects	Indicator	Item Number
1	Technical	Ease of using the media.	1
		Media can help students understand the material.	2
		Media can arouse student motivation.	3
2	Display	Attractive appearance (colors, background, and animation).	4
		The layout of the media components is precise and appropriate.	5
3	Text	Text readability.	6
		Correctness of the use of typeface and font size.	7
		Accuracy of the use of writing spaci.	8
		The use of a combination of colors and images can support the understanding of the material.	9
4	Picture	Standard image quality or image resolution.	10
		The suitability of the layout of the image.	11

Table 3. Teacher Response Instrument Grid

No.	Aspects	Indicator	Item Number
1	Content Compliance	Suitability of content with science learning.	1
		Suitability of activity content with learning competencies.	2
		Content compliance with learning indicators	3
		Suitability of activity content to learning objectives.	4
2	Language	The simplicity of the language used in E-LKPD is oriented towards the Project Based Learning (PJBL) model with QR Code packaging.	5
		Ease in understanding sentences and does not have double interpretation.	6
3	Display	Interesting cover illustration of E-LKPD oriented Project Based Learning (PJBL) model with QR Code packaging.	7
		The attractiveness of the images used is in accordance with the learning material.	8
4	Highlights	The use of color combinations in E-LKPD is oriented towards the Project Based Learning (PJBL) model with QR Code packaging	9
		The attractiveness of presenting E-LKPD oriented to the Project Based Learning (PJBL) model with QR Code packaging	10

Table 4. Individual and Small Group Test Instrument Grilles

No.	Aspects	Indicator	Item Number
1	Highlights	The attractiveness of learning using E-LKPD learning media is oriented towards the Project Based Learning (PJBL) model.	1
		The attractiveness of the E-LKPD media display is oriented towards Project Based Learning (PJBL) with QR Code packaging (background, color, and images.	2
2	Media	Ease of use of Project Based Learning (PJBL) oriented E-LKPD media with QR Code finish.	3
		Clarity of instructions for using Project Based Learning (PJBL) oriented E-LKPD media with QR Code packaging.	4
3	Material	Ease of understanding the material presented at the Project Based Learning (PJBL) oriented E-LKPD with QR Code packaging.	5
		Clarity of the material displayed on the Project Based Learning (PJBL) oriented E-LKPD with QR Code packaging.	6
4	Display	The clarity of the images presented at E-LKPD is Project Based Learning (PJBL) oriented.	7
		Clarity of the text of the material presented at E-LKPD is oriented towards the Project Based Learning (PJBL) model.	8
5	Language	The presentation of the word used is easy for students to understand.	9
		Ease in understanding the sentences presented.	10

Before the instrument is applied, it is first tested for validity. Content validity is used in measuring the level of validity of the lattice of media instruments. The validity test of the content is carried out using the Gregory formula, namely by using expert judgment. The 2 x 2 cross tabulation is used to measure the validity of the contents

3. RESULT AND DISCUSSION

Result

This research has the following objectives: (1) To produce a Project Based Learning (PJBL)-oriented E-LKPD design with QR Code packaging on class IV IPAS content SD N 1 Semarapura Kelod; (2) To test the validity of the contents of Project Based Learning (PJBL)-oriented E-LKPD with QR Code packaging on class IV IPAS content SD N 1 Semarapura Kelod; and (3) To test the practicality of Project Based Learning (PJBL)-oriented E-LKPD with QR Code packaging on class IV IPAS content SD N 1 Semarapura Kelod. This research was carried out on February 19, 2024 at SD N 1 Semarapura Kelod. The subject in this study is Project Based Learning (PJBL)-oriented E-LKPD learning media with QR Code packaging. The object of the trial in this development research is the validity and practicality of the E-LKPD media oriented to the Project Based Learning (PJBL) model with QR Code packaging on Natural Science (Science) Subjects Natural Resources Materials. The ADDIE model is the model used in this study. This model consists of five stages, namely: (1) first, analysis; (2) second, design; (3) Third, Development; (4) fourth, implementation; and (5) fifth, evaluation. However, in the implementation of this research, the implementation stage and evaluation stage were not carried out. This is because the implementation of the implementation stage and the evaluation stage requires a long time, besides that at that stage requires careful preparation and limited time, resources, and finance. This research produced E-LKPD media oriented to the Project Based Learning (PJBL) model with QR Code packaging on Natural Science Subjects (Science) Natural Resources Material that has been tested for validity and practicality.

Based on the formulation of the first problem, namely the design of Project Based Learning (PJBL)-oriented E-LKPD with QR Code packaging on the content of IPAS class IV SD N 1 Semarapura Kelod, it was obtained that E-LKPD consisted of 14 pages including covers. E-LKPD is designed using storyboards created in Microsoft Word. The material presented is about Natural Resources and their Conservation in grade IV elementary school. After creating the storyboard, proceed with visualizing E-LKPD on the Canva website. E-LKPD is designed in such a way that consists of 4 parts, namely the E-LKPD cover, the E-LKPD opener (Learning Outcomes and Learning Objectives), the contents of the E-LKPD which consists of 2 parts, and the E-LKPD cover (developer profile). In every activity in E-LKPD, there are instructions in written and oral form in the form of audio that can be played. The visualization of E-LKPD can be seen in Figure 1.

Figure 1. Visualization E-LKPD Opening Section

In the results of data analysis on the development of E-LKPD, an analysis of the results of the validity of E-LKPD development is presented. The results of the data analysis consisted of (1) expert tests of learning material content, (2) learning media expert tests, (4) practitioner tests, (5) individual trials, and (6) small group trials. The data are presented sequentially according to the results obtained at each stage which can be seen in Table 5.

Table 5. Percentage of Validity of E-LKPD Development

No	Test Subjects	Validity Results	Percentage Qualification
1	Test Learning Material Experts	0.90	High Validity
2	Learning Media Expert Test	0.88	High Validity
3	Practitioner Test	95%	Excellent
4	Individual Trial	95%	Excellent
5	Small Group Trials	95.27%	Excellent

Following comments and suggestions provided by learning material experts on monopoly media, improvements were made to the product. Comments and revision suggestions from learning material experts can be seen in Table 6.

Table 6. Material Expert Comments and Suggestions

No	Comments and Suggestions
1	In the E-LKPD, add explanations to be done in groups or individually.
2	Learning objectives 2 and 3 are created in the KKO HOTS format.

Following the comments and suggestions provided by learning media experts at E-LKPD, improvements were made to the product. Comments and revision suggestions from learning media experts can be seen in **Table 7**.

Table 7. Media Expert Comments and Suggestions

No	Comments and Suggestions
1.	Add a hyperlink to the literature review barcode and practice questions
2.	Before students work on questions or make concept maps, there must be instructions on what material students should study first.
3.	Place the developer profile on the back, and use plain letters.

Based on Table 7, the assessment results from learning material experts, learning media experts, teacher (practitioner) and student responses (individual trials and small group trials) have scores with very good qualifications and high validity. Based on this, the E-LKPD oriented Project Based Learning (PjBL) Model with QR Code packaging is valid and suitable for use in learning activities

Discussion

The product produced in this study is in the form of E-LKPD with a Project Based Learning (PJBL) approach with QR Code packaging for grade IV students of SD N 1 Semarapura Kelod. This research has the following objectives: (1) To produce a Project Based Learning (PJBL)-oriented E-LKPD design with QR Code packaging on class IV IPAS content SD N 1 Semarapura Kelod; (2) To test the validity of the contents of Project Based Learning (PJBL)-oriented E-LKPD with QR Code packaging on class IV IPAS content SD N 1 Semarapura Kelod; and (3) To test the practicality of Project Based Learning (PJBL)-oriented E-LKPD with QR Code packaging on class IV IPAS content SD N 1 Semarapura Kelod.

In research on the development of E-LKPD learning media oriented to the Project Based Learning (PJBL) model with QR Code packaging, the ADDIE model is used. The ADDIE model is a learning model design that develops research systematically to help solve problems in learning related to learning resources according to student characteristics (Nurhadiyati et al., 2021; Sari et al., 2020). This ADDIE model consists of five steps: analysis, design, development, implementation and evaluation.

The first stage is the analysis stage. In this stage there are several types of analysis consisting of needs analysis, competency analysis, analysis of characteristics possessed by students. Analysis of needs to make observations at SD N 1 Semarapura kelod by conducting interviews with grade IV teachers regarding things needed in the learning process, especially in science subjects. Competency analysis achieved by students is carried out by looking at learning objectives (TP), indicators of competency achievement and subject matter (Nurhadiyati et al., 2021; Sari et al., 2020). The purpose of this is for E-LKPD learning media oriented Project Based Learning (PJBL) model with QR Code packaging developed in accordance with the existing curriculum. Analysis of student characteristics was carried out with the aim of determining the level of abilities, knowledge, attitudes and skills possessed by grade IV students of SD N 1 Semarapura kelod (Saputra & Sujarwanta, 2021; Surya et al., 2018).

The design stage where researchers plan the media and material developed. Activities carried out at the planning stage (Design) are, Compiling designs or making media storyboards that will be developed. After carrying out the design stage, then proceed to consult the supervisor to provide input and suggestions related to the media that has been made. At the development stage, the development of PJBL-oriented E-LKPD products began based on the design results. At the development stage, the PJBL-oriented E-LKPD design will be realized into an actual product by utilizing several applications and websites. The applications and websites used are canva, youtube, and QR Code (Halili, 2019; Sinaga et al., 2022). At this stage, PJBL-oriented E-LKPD products will be produced that are ready to be tested on experts. If the product is ready, it will proceed to assessment or validity tests by material experts, media experts, and practicality tests by teachers and students in small groups. Assessment is carried out by providing assessment instruments in accordance with each expert. The results of the assessment from experts will be analyzed to determine the validity of PJBL-oriented E-LKPD (Rizkika et al., 2022; Setiawan & Fikri, 2022).

After various processes or stages carried out in the development of the Project Based Learning-oriented E-LKPD design, it was found that the product was indeed possible, interesting, and feasible to be developed and applied to grade IV students of SD Negeri 1 Semarapura Kelod. This is also directly proportional to the results of previous research which in their research also showed that the application of E-LKPD which operates Project Based Learning is possible and interesting to be applied to students (Adifta et al., 2022; Lailiah et al., 2021). However, the difference between this study and the study lies in the addition of QR Codes to make it easier for students to access literature reviews, practice questions, deadline polls, and project creation. In addition, the E-LKPD that was made also contains a learning video related to the material used. This is so that students do not feel bored during the learning process (Halili, 2019; Savitri et al., 2021).

Based on the analysis of material experts, it obtained a validity index of 0.90 and the feasibility analysis of media experts obtained a validity index of 0.89, and was included in the range of ≥ 0.8. According

to Aiken's criteria, if the validity index shows a ≥ number of 0.8, it means that the product developed is included in high validity. This means that E-LKPD is oriented towards the Project Based Learning (PjBL) Model with QR Code packaging, obtaining high validity qualifications (Cahyo Nugroho & Hendrastomo, 2021; Fadzilah et al., 2020; Munzil et al., 2022). This study showed that the PjBL-oriented E-LKPD media used in the study obtained a validity index of 0.90, or equivalent to 90%, which exceeded the threshold of 0.8 according to Aiken's criteria, indicating high validity. This finding is supported by previous research by previous study which also used E-LKPD media and achieved a feasibility rate of 96.9%, indicating that the media is very valid in the context of research (Adifta et al., 2022; Lestari & Muchlis, 2021). The consistency of results between the two studies confirms the reliability and validity of PjBL-oriented E-LKPD media as an effective learning tool.

There were no comments and suggestions from small group test subjects. This study shows that the PjBL-oriented E-LKPD media used in the study obtained a practical percentage of 95.27% which is in the range of 90 – 100% very good qualifications. This finding is supported by previous research which his research on the practicality of HOTS-based E-LKPD was obtained based on student responses with the percentage of practicality of classes VA, VB, VC SDN Dabasah 1 and SDN Kotakulon 1 of 81.66%, 83.64%, 82.04%, 83.88% included in the very practical category (Adifta et al., 2022). The results of this study indicate that the use of Project-Based Learning (PBL)-based electronic worksheets equipped with QR codes can improve the quality of learning. With interactive features that facilitate quick access to digital resources, students can more easily understand the material being taught, especially in practice-based projects. The implementation of QR codes in e-worksheets provides practical benefits for teachers and students. Teachers can easily direct students to related online resources, while students can access additional learning materials at any time without time and place constraints, supporting more flexible learning.

However, this study has limitations, this study relies on stable access to digital devices and the internet. Students who do not have adequate access to technology or fast internet connections may have difficulty utilizing e-worksheets effectively. There are differences in the level of technological understanding between students and teachers, which may affect the effectiveness of implementing PBL-based electronic worksheets. Students who are less familiar with technology may need more intensive guidance to use existing features, such as scanning QR codes.

4. CONCLUSION

E-LKPD is oriented Project Based Learning (PjBL) Model with QR Code packaging to provide science learning in the fourth grade of elementary schools that are developed have very good categories to be implemented in the learning process. This can be seen from the validity and practicality tests involving experts / lecturers, teachers / practitioners and students who provide good responses as well as some suggestions for improving the quality of E-LKPD development.

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