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Development of Educaplay Learning Media Based on Problem Based Learning in Elementary School Students' Science Learning

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Abstract: The research started from the results of observations, the problem found at SD 27 Anak Air and SD 11 Lubuk Buaya Experiment and SD 02 Lubuk Buaya is that teachers tend to rely on the lecture method and textbooks, so students are less actively involved in the learning process. This makes students quickly feel bored and difficult to understand abstract concepts in IPAS. This research uses the type of development research. The test subjects were fifth grade teachers and fifth grade students of SDN 11 Lubuak Buaya and SDN 27 Siswa Air. This research procedure uses ADDIE development steps, namely: Analysis, design, development, implementation, evaluation. The results showed that the overall average score for validation of Educaplay Learning Media Based on Problem Based Learning was 38.3 including in the very valid category. From the aspects assessed, the value for the material is 3 with a very valid category. From the linguistic aspect, the average score is 3 with a very valid category, and from the media aspect, the average score is 3 with a valid category. The average percentage of respondents' assessment of Problem Based Learning-based Educaplay learning media is in the very practical category, namely with a practicality percentage of 90.48% and 85.71%. The assessment of the effectiveness sheet, obtained with an average assessment of 85.24, was declared effective for the development of Problem Based Learning-based Educaplay learning media.

Keywords: Educaplay; Learning Media; Problem Based Learning

Introduction

Education aims to form a positive personality according to the cultural values of society, optimize spiritual potential, self-control, morals, and skills to benefit society and the state. This is in line with the vision of the Merdeka Curriculum, which emphasizes the holistic development of learner competencies in order to make a positive contribution to society and the state, so that its implementation is an effective means of realizing the goals of national education (Noor, 2018).

One of the educational units that is the main focus in implementing the curriculum is elementary school. Elementary school is the initial foundation that determines the success of students at the next stage of education. This success can be created through an appropriate and effective learning process in each subject. It should be realized that the learning process in each subject has different characteristics from other subjects. The learning process should be well considered in the presentation of each subject. One of the subjects that has an important influence on the learning process in elementary school is Natural and Social Sciences (IPAS).

Through science learning, students are not only trained to study several fields of study, such as

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chemistry, physics, biology, and social. Rather, science learning is intended to provide information for students through activities that place students as the main actors in learning. According to Assazili et al. (2024) explained that science learning (Natural and Social Sciences) at the elementary school level aims to introduce students to the basic concepts of natural and social sciences. Through interactive methods that are relevant to everyday life, students are invited to observe, understand, and connect natural and social phenomena around them. The main goal is to develop a deep understanding of the world around them, build critical thinking skills, and encourage a caring attitude towards the environment and society.

Science learning should help students understand basic concepts in natural and social sciences. In addition, students are also required to be actively involved in the learning process. This helps them understand the concepts taught in a more concrete and interesting way. Science learning needs to be presented concretely and interestingly to facilitate students' understanding. Ayurachmawati, (2018) states that science learning needs to pay attention to the relevance of the material to everyday life, encourage students to discover concepts through experimentation and observation, utilize various learning resources, actively involve students, and use technology to increase their interest and involvement in the learning process.

When implementing science learning, teachers need to have the ability to effectively organize the classroom atmosphere and design activities. Learning that adapts to the development of students, including the development of knowledge, skills, and attitudes. Teachers must be able to create a learning atmosphere that promotes interaction between students and the various methods used in the learning process, including evaluation at the end of learning.

In the world of education, learning media has a strategic role as a tool to measure the success of the teaching and learning process. Learning Media not only aims to find out how far students understand the material being taught, but also to provide feedback for teachers in improving teaching effectiveness. However, the print media approach that tends to prioritize the final result is often less able to describe the potential and development of students as a whole. This condition requires innovation in learning media to be more relevant, adaptive, and support the diversity of student learning styles.

The development of technology and changes in the paradigm of 21st-century education also encourage the importance of innovation in learning media. The digital era opens up opportunities for the development of various technology-based media, such as online learning media applications, gamification, and learning data analysis. This innovation not only simplifies the evaluation process but is also able to increase student involvement in the learning process. In addition, an innovative evaluation approach allows for a more holistic measurement of learning aspects, such as critical thinking skills, collaboration, and creativity, which are the demands of 21st-century competencies.

In addition to the technological aspect, innovation in learning media must also consider the principles of fairness and inclusivity. Traditional learning media systems are often insensitive to differences in students' abilities, interests, and backgrounds. By integrating a more personalized approach, such as project-based assessment, portfolio, or self-assessment, teachers can provide equal opportunities for each student to show their potential. This innovation also helps create a friendlier learning atmosphere and encourages students to participate more actively. The main challenge in implementing learning media innovation lies in the readiness of teachers and innovation. Therefore, support for educational policies and cooperation between various parties, including the government, schools, and educational communities, are essential to ensure that this innovation can be adopted effectively.

Overall, innovation in learning evaluation is not just an option, but an urgent need to answer the challenges of education in the modern era. With innovation, the evaluation process becomes not only an objective measuring tool, but also a means to support the development of students' potential as a whole. Research on the importance of innovation in learning evaluation can make a significant contribution to the development of more inclusive, relevant, and future-oriented educational practices. In recent years, digital-based learning evaluation has become a major focus in efforts to improve the quality of education. According to research by Waruwu et al. (2024), the use of information technology in learning can improve accessibility, flexibility, and the quality of the teaching and learning process. This technology allows teachers to adapt teaching methods according to the individual needs of students, so that learning becomes more inclusive and effective.

One of the platforms used in learning media is Educaplay. The application of Educaplay in evaluating Arabic language learning can increase student engagement. Questions presented in the form of interactive games are able to attract attention and motivate students, as well as provide direct feedback that helps the learning process (Nurhayati et al., 2025; Sundari, 2024). In addition, another study found that the use of Educaplay can increase students' interest in learning. Students feel happy in receiving learning, are

able to complete assignments independently, and become more enthusiastic and easy to understand the material. This shows that this platform is effective as an interactive and fun learning medium (Aisyah & Rahmwati, 2024; Sari et al., 2025).

However, the implementation of digital learning media is not without challenges. Some of the obstacles identified include unstable internet networks, teachers' inability to use technology, and lack of variation in the use of learning applications. These obstacles can reduce students' learning motivation and have a negative impact on their learning outcomes (Febriani et al., 2024).

Overall, digital learning media through platforms such as Educaplay offers significant opportunities to improve the quality of learning. However, efforts are needed to overcome existing challenges, including improving teacher competence in technology and providing adequate infrastructure, so that the benefits of learning media can be optimized in the education process. Observations on science learning at SD 27 Anak Air, SD 11 Lubuk Buaya, and SD 02 Lubuk Buaya revealed a number of problems that hamper the quality of learning. At SD 27 Anak Air and, the main problem found was the lack of use of interactive learning media. Teachers tend to rely on lecture methods and textbooks, so that students are less actively involved in the learning process. This makes students quickly feel bored and have difficulty understanding abstract concepts in science.

Meanwhile, in SD 02 Lubuk Buaya and SD 11 Lubuk Buaya, the most prominent problem is the lack of teacher training in utilizing technology as a learning medium. Although these schools have several technological devices, such as projectors and computers, teachers have not been fully able to utilize them to support science learning. As a result, students do not get an innovative and interesting learning experience, which can increase their motivation.

Comparison between the three schools shows that SD 27 Siswa Air is more in need of developing technology-based learning media to improve student interaction. Meanwhile, SD 11 Lubuk Buaya faces more structural challenges, such as high student ratios and narrow classroom conditions. On the other hand, SD 02 Lubuk Buaya has the potential to utilize available technological devices, but requires increased teacher competence in their use.

From the observation results, it was also found that differences in school management and learning approaches affect student learning outcomes. At SD 27 Siswa Air, students showed a fairly low interest in learning due to less varied teaching methods. At SD 11 Lubuk Buaya, although teachers had tried to use group discussion methods, the large number of students made the implementation less effective. Meanwhile, at SD 02 Lubuk Buaya, the potential for developing technology-based learning was not optimal due to limited training and mentoring for teachers science learning. To overcome this, a specific approach is needed according to the needs of each school. At SD 27 Siswa Air, the development of interactive learning media must be a priority. SD 11 Lubuk Buaya needs to seek solutions to reduce the ratio of students per class, such as by dividing classes or increasing the capacity of the classroom. Meanwhile, at SD 02 Lubuk Buaya, teacher training in utilizing technology needs to be improved so that learning becomes more effective and interesting for students.

Analysis of the needs of teachers, students, and schools revealed several important things. Teachers need training and guidance in integrating technology into science learning. They want media that is not only interesting, but also easy to use and relevant to the curriculum. Students need learning media that is interactive, fun, and able to motivate them to learn actively and independently. From the school side, efforts are needed to support the procurement of technology facilities and provide access to digital-based learning platforms.

The development of Educaplay-based learning media with the Problem Based Learning (PBL) model is a relevant solution to answer this need. This media allows students to be actively involved in solving real problems, which is in line with the objectives of 21st century learning. PBL is a learning model that uses real-world problems as a context for students to learn, by building critical thinking and skills in problem solving, and constructing essential knowledge and concepts from the subject matter (Khairani & Aloysius, 2023). One of the advantages of the Problem Based Learning model is that it improves critical thinking skills, fosters student initiative in working, internal motivation to learn, and can develop interpersonal relationships in group work. In view of this, the purpose of this study is to discuss the problem of developing Problem Based Learning-based Educaplay learning media for IPAS learning for grade V students in elementary schools.

Method

The research model used is the ADDIE (Analysis, Design, Development, Implementation, Evaluation) research and development model. The research subjects were fifth grade teachers and students at SDN 11 Lubuak buaya and SDN 27 Siswa Air. Data collection techniques to determine the validity, practicality and effectiveness of Educaplay learning media development based on Problem Based Learning in IPAS subjects using

observation sheets and interview guidelines. The data obtained from various instruments were then analyzed qualitatively and quantitatively.

Result and Discussion

Level of Analysis (Analysis)

At this stage, the researcher conducted an analysis through observation of the fifth grade teachers at SD 02 Lubuk Buaya and SD 11 Lubuk Buaya and SD 27 Siswa Air Lubuk Buaya. The analysis stages obtained include (a) curriculum analysis, and (b) needs analysis, (c) material analysis as follows:

Curriculum Analysis

The results of the observation show that teachers at SD 02 Lubuk Buaya and SD 11 Lubuk Buaya and SD 27 Siswa Air Lubuk Buaya, the learning media used are traditional and IT that has been provided at school, such as simple media, whiteboards and printed books. Learning IPAS of SD 02 Lubuk Buaya and SD 11 Lubuk Buaya and SD 27 Air Lubuk Buaya students are held on certain days.

Teachers implementing science learning at SD 02 Lubuk Buaya and SD 11 Lubuk Buaya and SD 27 Siswa Air Lubuk Buaya have so far been included in the curriculum from the Education Office, but the implementation process is left to each school. The tools in implementing the learning process of the three elementary schools include the syllabus and lesson plans that are in accordance with the applied curriculum. However, from the results of the curriculum analysis, the researcher found that teachers did not develop learning media optimally. Ideally, the learning media used by teachers should be in accordance with the needs of the curriculum. So far, teachers have explained science learning to students through videos, whiteboards, and also practice.

Curriculum analysis was conducted to see the existence of the science learning program in elementary school, which is a program in the independent curriculum curriculum, based on the analysis, learning achievements and learning objectives were obtained as well as the existence of learning materials to recognize the geographical location map of Indonesia, natural wealth of living and non-living things in Indonesia. In addition, the results of the curriculum analysis can be used as a guideline to determine cognitive development in students developed in the independent curriculum.

Curriculum analysis produces learning outcomes and learning objectives. In this study, the reference for determining learning requirements is the independent curriculum. The independent curriculum was chosen because it was the curriculum used in the schools where the research was conducted, namely SD 11 Lubuk Buaya and SD 27 Siswa Air Lubuk Buaya.

Based on these data, researchers developed products with reference to opinion that the presence of media not only helps educators in delivering their teaching materials, but also provides added value to learning activities. The use of learning media in the learning process can arouse new desires and interests, arouse motivation and stimulation of learning activities, and even bring psychological influences to students. This goal is important to instill students' love for learning, especially science learning itself requires a sense of pleasure first, so that if students feel happy, the material and concepts contained in science learning will be easily internalized in students.

Needs Analysis.

From the observation results, it was obtained information that the media used in SD 11 Lubuk Buaya only used simple media such as videos and whiteboards. So that learning like that is less effective for students because students cannot play directly with the media, but students just sit still and listen to what the teacher says.

Learning at SDN 27 Anak Air found teachers using printed learning media. Teachers are still seen using media that is already available at school. Where students need a variety of learning media to be more enthusiastic about participating in learning activities. Teachers only use media that is already available in the classroom. So it is seen that teachers have not been able to develop the use of digital-based learning media in the classroom.

Material Analysis

The material of the geographical location map of Indonesia is one of the important topics in learning science which aims to introduce students to the strategic position of the Indonesian region between two continents and two oceans. This geographical location has a direct impact on climate conditions, culture, and natural resource potential in each region. Through the Problem Based Learning (PBL) approach, students can be invited to study various real problems related to the distribution of regions and the influence of geographical location on the lives of Indonesian people, such as differences in planting seasons or variations in natural products on various islands.

Indonesia's natural wealth is very diverse and includes endemic flora and fauna spread across various ecosystems such as tropical rainforests, seas, and mountains. This biodiversity provides extensive learning opportunities for students to understand the importance of environmental conservation and sustainable resource management. In Educaplay

learning media Based on PBL, students can be invited to solve real problems such as the threat of species extinction or habitat destruction through simulations, interactive quizzes, and educational games that hone their critical thinking skills.

Meanwhile, non-living natural resources such as mining products, petroleum, natural gas, and other mining materials are also an important part of the material that students need to understand. These resources have strategic value in national development, but also pose challenges such as over-exploitation and environmental pollution. With the PBL approach integrated into Educaplay media, students can be involved in case studies on the use and impacts of non-living resources, encouraging them to think in a solution-oriented and responsible manner in responding to environmental problems that occur around them.

Planning Level (Design)

The Design stage in this development research begins with the formulation of learning objectives that refer to the Learning Outcomes (CP) of the Independent Curriculum for grade V Science subjects. These objectives are formulated to support the Problem Based Learning (PBL) approach, which emphasizes students' ability to think critically, creatively, and be able to solve real problems that are relevant to everyday life. These objectives are the basis for compiling materials and activities that will be included in the Educaplay media.

The next step is to compile a PBL-based learning syntax flow that will be integrated into the media. This syntax includes five main stages, namely problem orientation, organizing students to learn, guiding investigations, developing and presenting work results, and analyzing and evaluating the problem-solving process. Each stage is then designed to be accommodated through interactive activities available on the Educaplay platform, such as puzzles, scenario-based quizzes, and other interactive exercises.

Next, the researcher designed the content of the fifth grade science subject material that would be used in the media. The selected material must be in accordance with the characteristics of the students and support problem-based learning, on the topic "Geographical Location of Indonesia". The selection of sub-materials was carried out selectively so that it could be packaged in the form of contextual problems that challenge students to think and find solutions through digital media.

In order to assess the achievement of learning objectives, researchers also designed assessment instruments that are in accordance with the PBL approach. This instrument includes assessment of processes, attitudes, and student problem solving results. In addition, Educaplay media is also designed to include evaluations in the form of interactive quizzes, so that students can immediately get feedback on the answers they provide during the learning process.

Another aspect designed at this stage is the selection of types of Educaplay activities that are in accordance with the characteristics of elementary school students. Researchers determine media formats such as matching games, crosswords, fill in the blanks, and video quizzes, which are then poured into a storyboard as an initial guide for media creation. This design considers the need for attractive visuals and the use of simple but meaningful language so that students can use the media independently and enjoyably.

Finally, the researcher created a learning scenario that describes how the Educaplay media will be implemented in classroom learning activities. This scenario includes the role of the teacher as a facilitator, the flow of media use in each stage of PBL, and the time allocated for each activity. This planning aims to ensure that the media is not only a learning aid, but also a center for learning activities that can increase students' active involvement and understanding of the science and science material.

Development Stage

The validation stage of the Educaplay learning media based on Problem Based Learning in science learning is carried out in the third stage of the ADDIE development model. This development stage aims to produce valid Educaplay learning media based on Problem Based Learning, so that it is suitable for use in the learning process. The development stage for this stage is the validation of the learning media design.

The designed learning media was then validated by the validator. Validation was carried out by three validators from universities. In this activity, experts were asked to assess the learning media that had been created. The assessment included content, presentation, graphics and language. The validator was asked to provide an assessment and suggestions for improvement of the learning media that had been designed. The validators who validated the developed learning media were Mrs. RP, Mr. MHD, Mr. ARS, and Mr. RYD.

Based on the results of the discussion and suggestions from the validator, revisions were made to the learning media. The suggestions given by the validator can be seen in the attachment. The revised learning media was submitted back to the validator. The validator is asked to provide an assessment and opinion on the learning media that has been designed. Validation is complete if the validator has stated that the learning

media that has been designed is valid and ready to be tested.

The validation results of the Educaplay Learning Media Based on Problem Based Learning were carried out on several aspects including aspects of content feasibility, presentation aspects, and media aspects. The media created was validated by three expert validators.

Figure 1. Educaplay Learning Media

The average overall score for the validation of Educaplay Learning Media Based on Problem Based Learning is 38.3, which is included in the very valid category. From the aspects assessed, the value for the material is 3 with a very valid category. From the linguistic aspect, an average of 3 is obtained with a very valid category, and from the media aspect, an average value of 3 is obtained with a valid category. This is in accordance with the criteria for determining the level of validity in the previous chapter.

So it can be concluded that the Educaplay Learning Media Based on Problem Based Learning has been valid and can be used as a learning resource for teachers in the learning process. This media is designed to help teachers learn about science learning.

Implementation Stage (Implementation)

After the validation process with experts was completed, improvements were made to the Educaplay learning media based on Problem Based Learning according to the validator's suggestions. Furthermore, the implementation of the Educaplay learning media based on Problem Based Learning was carried out to see the practicality of the learning media. The implementation of the Educaplay learning media based on Problem Based Learning was carried out at SDN 11 Lubuk Buaya. The Practicality Test was carried out on March 14, 2025 at SDN 11 Lubuk Buaya, March 20, 2025 at SDN 27 Anak Air.

After being declared valid, the next stage carried out is the implementation stage. At this stage, researchers conducted a trial of the Educaplay learning media based on Problem Based Learning to small/limited groups and large/wide groups starting from March 12, 2024. The trial in small groups was carried out by researchers in Focus Group Discussions (FGD) at KKG, while the trial in large groups was carried out by researchers in one class at SDN 11 Lubuk Buaya. Product trials in small and large groups were carried out when learning the theme against the test instrument that had been given to educators/teachers. This test instrument was used to show the effectiveness of the Educaplay learning media based on Problem Based Learning that researchers developed.

During the implementation, this study was assisted by two observers, namely class teachers at SDN 11 Lubuk Buaya. Observers have the task of observing the implementation of activities and observing teacher activities while using Educaplay learning media based on Problem Based Learning. This aims to obtain more accurate results. The practicality of the Educaplay learning media based on Problem Based Learning that was developed can be seen in the results of the practicality questionnaire analysis by teachers and observations of the use of Educaplay learning media based on Problem Based Learning by teachers.

The teacher response questionnaire was given to find out the teachers' opinions on the Educaplay learning media based on Problem Based Learning that had been prepared. The results of the responses from teachers of SDN 11 Lubuk Buaya and SDN 27 Anak Air which has used the Educaplay learning media based on Problem Based Learning that was developed. The results show that the average percentage of respondents' assessment of the Educaplay learning media based on Problem Based Learning is in the very practical category, namely with a practicality percentage of 90.48% and 85.71%, meaning that the Educaplay learning media based on Problem Based Learning that was developed has practicality both in terms of presentation and use. This is in accordance with the practicality category of the teacher and student response assessment sheets in the previous chapter

Thus, it can be concluded that the practicality of the Educaplay learning media based on Problem Based Learning based on the teacher response questionnaire is categorized as very practical.

The practicality percentage data above can be concluded that the Educaplay learning media based on Problem Based Learning is in the category very practical. We can see this in the percentage of practicality, namely the aspect of attractiveness, the aspect of the process of use, the aspect of ease of use, the aspect of time and the aspect of evaluation with an overall value of 90.48% at SDN 11 Lubuk Buaya and 85.71% at SDN 27 Anak Air.

Evaluation Stage (Evaluate)

After implementing the Educaplay learning media based on Problem Based Learning at SDN 11 Lubuk Buaya. Furthermore, the researcher made product improvements based on the results of observations during the implementation of the Educaplay learning media based on Problem Based Learning at SDN 11 Lubuk Buaya and input and suggestions from the supervising lecturer which aimed to obtain a final product that was developed to be perfect and had good quality because it met 2 aspects, namely very feasible and very agree

After the trial, the study was continued by testing the effectiveness of the Educaplay learning media based on Problem Based Learning that was designed. This effectiveness test was intended to see whether the Educaplay learning media based on Problem Based Learning could be used to achieve effective goals in increasing teacher activity. The effectiveness of the Educaplay learning media based on Problem Based Learning was seen from the activities with students in answering the evaluations in Educaplay. From the results of the activities, it was seen that students really enjoyed learning activities with the Educaplay learning media based on Problem Based Learning. This was seen in the 3 meetings conducted when the research on students of SDN 11 Lubuk Buaya and SDN 27 Anak Air was in accordance with expectations.

The results of the effectiveness sheet assessment, obtained with an average assessment of 85.96, were declared effective in developing Educaplay learning media based on Problem Based Learning in Elementary Schools.SDN 11 Lubuk Buaya. The results of the effectiveness sheet assessment, obtained with an average assessment of 85.24, were declared effective in developing Educaplay learning media based on Problem Based Learning at SDN 27 Anak Air.

The effectiveness of a learning media is carried out after the learning media is said to be valid and practical. A learning media can also be said to be effective if it has a good influence on achieving learning objectives. According to Hasanah et al. (2023); Samsudin & Raharjo (2023), the effectiveness of the learning program is reflected in the achievement of predetermined instructional goals, the implementation of learning experiences that are attractive and actively involve students, and the availability of supporting facilities that support the learning process optimally. The effectiveness of Educaplay learning media based on Problem Based Learning can be seen through the results of student assessments. In the application of this learning media. Educaplay learning media based on Problem Based Learning is very effective because the objectives obtained are in accordance with what is expected (Dewi et al., 2023).

Along with the development of science supporting learning activities to be effective and efficient is a teacher in addition to having the ability to develop and utilize learning media that has been adjusted to the method used, characteristics, and types of media that are adjusted to the learning objectives to be achieved (Buntu & Zainal, 2025; Halimah et al., 2023). While the use of media in the learning process can help teachers in delivering material to students (Nugrahani & Arifin, 2019).

Educaplay learning media based on Problem Based Learning is one of the learning media that can be used as a guide for teachers in implementing the learning process (Vargas-Saritama & Celi, 2024). The development of Educaplay learning media based on Problem Based Learning aims to produce valid, practical and effective learning media. Learning media designed in web links, developed using the ADDIE development model. Educaplay learning media based on Problem Based Learning that has been declared valid by expert validators, is then implemented to obtain practicality data and effectiveness data.

The results of media validation on the material aspect obtained an average value of 4 which is included in the very valid category. This means that the Educaplay learning media based on Problem Based Learning that was developed is in accordance with CP and TP. The Educaplay learning media based on Problem Based Learning that was developed is also in accordance with student development, in accordance with learning needs, the truth of the substance of the material and can provide benefits and insights for students (Graça et al., 2021). The results of the validation of learning media for the linguistic aspect obtained an average of 4 with a very valid category. This shows that the language used in the learning media is in accordance with good and correct Indonesian language rules. Use the language in the learning media is simple, straightforward and easy to understand, and the language used in the learning media is communicative and interactive (Mykytka, Schuette, & K Valero, 2022).

Viewed from the Media aspect, the type of letters or numbers used in the learning media are in accordance with student development and the font used looks attractive. The design of the developed learning media display is attractive and in accordance with the learning concept. The use of color variations in the Educaplay learning media based on Problem Based Learning is also in accordance with student development. This can be seen from the validation results that have been declared valid by the validator, namely with an average of 4 which is included in the very valid category.

The results of the validation of the Educaplay learning media based on Problem Based Learning were carried out on several aspects including aspects of content feasibility, presentation, and media aspects. The media created was validated by three expert validators. The average overall score for the validation of the Educaplay learning media based on Problem Based Learning was 3, included in the very valid category. From the aspects assessed, the value for the content was 95% with a very valid category. From the presentation aspect, an average of 95% was obtained with a very valid category, and from the language aspect, an average value of 97.5% was obtained with a valid category.

To produce learning media that is suitable for use in learning, a series of assessments and revisions are carried out by experts related to learning media with expert validators in material, media, and instruments. The activities carried out are content validity tests to experts, then the instrument is revised according to suggestions/input from experts, the instrument is declared valid in terms of content depending on the expert (Baque et al., 2023). In accordance with the results of research conducted by Rahmatin, (2016) if the media developed is not yet valid, a revision will be carried out, but if the media is valid, it will continue to the next process.

The results of the material analysis on the material on the geographical location map of Indonesia in science learning have a strategic role in introducing students to Indonesia's position between two continents and two oceans, as well as its impact on climate, culture, and natural resources. Through the Problem Based Learning (PBL) approach, students are trained to examine real problems related to the distribution of regions and the influence of geographical location on people's lives. In addition, Indonesia's abundant natural wealth, such as endemic flora and fauna in various ecosystems, is an important learning tool about environmental conservation and resource management. Educaplay learning media based on PBL provides.

As for non-living natural resources such as mining, petroleum, and natural gas, they are important materials to equip students with an understanding of the strategic role of these resources in development, while also raising awareness of the impacts of exploitation and pollution. The integration of PBL in Educaplay allows students to be actively involved in case studies and encourages a solution-oriented attitude and responsibility towards environmental issues.

This practicality test can be done by giving a questionnaire to teachers as users of learning media. To see whether the learning media developed is practical or not, a trial was conducted on teachers at SDN 27 Anak Air and SDN 11 Lubuk Buaya. The practicality observed was a questionnaire of teacher responses to the practicality of the Educaplay learning media based on Problem Based Learning used.

The developed learning media can help teachers in the learning process. The results of the analysis of the teacher response questionnaire show that the Educaplay learning media based on Problem Based Learning that was developed is very practical to use in the learning process. This can be seen from the average teacher assessment of the practicality questionnaire of the Educaplay learning media based on Problem Based Learning at a percentage of 90.48% which is in the very practical category.

From the results of the teacher response analysis, it is shown that the developed learning media is easy to use in the learning process. The use of the developed media helps teachers in implementing the science and education learning process. The developed learning media can also make it easier for teachers to help students understand the subject matter. This is in accordance with the opinion of Amirudin & Widiati, (2017) that "Learning media provides convenience and can help teachers in preparing and implementing the learning process in the classroom". Thus, based on the data obtained, the Educaplay learning media based on Problem Based Learning that was developed is very practical to use in the science and education learning process in elementary schools (Soares, 2025).

A good learning media, in addition to meeting the validity criteria, should also be practical. The practicality of learning media is related to the ease of teachers in using the developed learning media. This is in line with the opinion of Arsanti, (2018) who stated that a media is said to be practical if the media can be used easily by teachers and students in learning.

According to research conducted by Zulkarnain & Jatmikowati, (2018) that the media used by the teacher will be practical if students give a positive response, which is indicated by the results of the assessment or questionnaire given. Meanwhile, according to Oktaviani et al., (2022) Learning media are considered practical if they meet two criteria: first, experts and supervisors acknowledge that the integrated Islamic comic media developed is applicable; second, in practice, the media proves to be implementable, meaning it is easy to use during the implementation stage and can be effectively utilized by students.

Conclusion

Based on the development and trials that have been carried out on the Educaplay learning media based on Problem Based Learning in Elementary School Science Learning, the results of the study indicate that the

Educaplay learning media based on Problem Based Learning in Elementary School Science Learning has very valid, practical, effective criteria. This is in accordance with the validation results from expert validators and educational practitioner validators. These results provide an overview that the Educaplay media developed is valid and can be used in the learning process. These results provide an overview that the Educaplay learning media based on Problem Based Learning is very practical and can help in implementing the Science learning process in grade V of Elementary School. The results of observations of student activities, process assessment, and assessment of student learning outcomes provide a very good picture, meaning that the use of Educaplay learning media based on Problem Based Learning in science learning has been effectively implemented.

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