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Development of Teaching Materials Assisted by the Kvisoft Flipbook Maker Application to Improve Students Critical Thinking Skills

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Abstract: The PBL approach must be used in the creation of instructional materials for class III primary schools, utilizing the Kvisoft Flipbook Maker application. This study employs a new design for development research, or R&D, which proceeds through the following processes to arrive at the ADDIE model: analysis, design, development, implementation, and evaluation. Students in class III at SDN 01 Campago, SDN 03 Limo Badak, and SDN 10 Sasai Kandang in the Malalak District of the Agam Regency served as the research subjects. The results obtained from the standard validity analysis were "very valid" with an average media expert assessment of 91. 8%, material expert assessment 90.175% and language expert assessment 83.33%. From the practicality testing, educators received an assessment of 95.27% with the criteria "very practical". In summary, the creation and application of instructional materials utilizing the PBL paradigm in class III elementary schools, based on the Kvisfot flipbook maker program, satisfies the requirements for validity, practicality, and effectiveness.

Keywords: Critical thinking; Kvisoft Flipbook Maker; Teaching materials

Introduction

Welcoming the era of industrial revolution generation 4.0, the world is experiencing drastic improvements that have an impact on all aspects of life. One impact is on the education system. This reality certainly cannot be avoided so it becomes a new challenge and opportunity for the world of education. New challenges and opportunities are faced by educators to integrate technology in the learning process (Lase, 2019). With the development of science and increasing sophistication of technology, it can now make things easier and provide thousands of good benefits for humans (Jamun, 2018). Apart from that, advances in technology require that all learning devices, learning media and learning facilities used must also progress. Innovation in education is a dominant need (Serdyukov, 2017). For this reason, teachers must improve the quality of their teaching methods to convey knowledge to students (Hasibuan, 2015).

Various skills or life skills that are needed today or known as 21st century skills such as the ability to solve problems or think critically, life skills, social competence, pedagogy, leadership and collaboration, adaptability, initiative and entrepreneurship, the ability to communicate effectively verbally or writing, can receive and analyze various information, has high curiosity and imagination ability (Lestari, 2012). The various skills needed and demanded in the century of global change, better known as the industrial revolution 4.0, one of the skills that must be mastered is critical thinking skills. In order for this skill to be mastered, it needs to be trained from childhood, especially in elementary school (Rusnah & Mulya, 2018).

Critical thinking ability is the ability to analyze something in order to get answers to the problems faced,

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critical thinking is superior to creative thinking for the reason that critical thinking can increase the number of ways of thinking while creative thinking can only answer the problems faced without using many ways to solve the problem the (Susanto, 2016). Implementing the 2013 curriculum, students are required to be able to master critical thinking skills. According to Permendikbud number 81 A of 2013 Appendix IV, there are five primary learning experiences that make up the learning process: observing, inquiring, trying, reasoning, or associating and communicating (Susilana, 2014). Students who are still in elementary school need to hone their critical thinking skills so that it can become a habit for them. Because something that you are used to doing will be difficult to leave behind (Prameswari et al., 2018).

The reality found is that critical thinking skills have not been maximally implemented in elementary schools, activities that enable students to think critically such as asking questions about the problems they face or activities that contain critical thinking skills themselves are still minimally implemented. The issues were discovered after an initial investigation carried out in the elementary school setting in Malalak District, Agam Regency. The district is made up of three schools: SDN 01 Campago, SDN 03 Limo Badak, and SDN 10 Sasai Kandang. It can be seen that the learning process is still based on textbooks and LKS, students are more Dominant listening while teachers only lecture a lot so that learning seems monotonous and creates boredom for students because they have not been challenged to overcome the problems they encounter. Teachers are only stuck with the textbooks and worksheets in school so that when carrying out the learning process the teacher's teaching methods are not varied and do not challenge students to think critically.

When conducting observations and interviews in three elementary schools, information was obtained from the teachers that the schools had complete facilities and infrastructure available, such as several laptops, WiFi and projectors which could be used by teachers to increase students' learning motivation by varying their teaching styles, but the facilities and this infrastructure has not been fully utilized by teachers in the learning process. It is vital to create instructional materials that meet the needs and advancements of modern technology in order to make the best use of the infrastructure and facilities already in place in schools and to appropriately address a variety of issues. One of the efforts that teachers can make to make good use of school facilities and equipment is through developing teaching materials to make them more interesting and integrating technology in learning.

Teaching materials consist of several sheets or collections of learning materials that have been arranged regularly and systematically to create a conducive learning environment. However, if the teaching materials prepared do not comply with the requirements, various problems will arise in learning (Prastowo, 2016). Students will become motivated in learning if teaching materials are developed to be more interesting so they can think critically (Munthe et al., 2020). For this reason, teaching materials need interesting features such as animation, learning videos, and books that can be turned over automatically like real books. To create teaching materials with this feature, an application is required (Wijayanti et al., nd).

There are several things that educators must not be careless about in developing teaching materials, including adapting them to students' needs, to the curriculum and the students' character and social environment (Prastowo, 2015). So that the teaching materials developed can adapt to technological advances, the researchers chose an application called the kvisoft flipbook maker application. This application was chosen on the grounds that this application can provide an attractive appearance and is cost effective (Yusuf et al., 2020). Making electronic books is one form of technological advancement that can support the learning process (Samosir, 2021). This software is not only for creating learning presentations but can also develop interactive learning so that students learn with a display that has been prepared. Kvisoft flipbook maker can be a solution in developing teaching materials to support the argument for integrating technology in the world of education (Fahmi et al., 2019).

One benefit of using the Kvisoft flipbook creator tool is that it allows you to create a flippable page with text as well as images and videos that are integrated with the content (Anandari et al., 2019). Electronic teaching resources are intended to spark students' interest while facilitating people's access to books (Andriani, 2016). In addition to using technology into the classroom to motivate students to advance their attitudes, knowledge, and abilities, selecting an appropriate learning model is essential for creating instructional materials. The problem based learning (PBL) model is one of the various models that can be used (Aulinda, 2020). PBL is a learning method whose basic principle is that problems are the first step to gaining new knowledge(Nursalam, 2013). Students' learning skills definitely need to be improved in this day of globalization. One way to overcome this is by educators using problem based learning models in learning (Amir, 2012). *Problem Based Learning* or also known as problem-based learning, is learning that begins with presenting a problem, asking questions to generate discussion. The things discussed are of course problems that occur in students' daily lives (Amris & Desyandri, 2021).

Problem based learning can develop students' thinking skills in an open, critical and active way in learning so that it can help students to solve problems both individually and in groups(Effendi et al., 2021). Problem based learning can be used by teachers with the consideration that teachers want students not only to remember the learning material but also to master and fully understand the problems they face.(Barret & Terry, 2017). Students in the PBL approach are allowed to conduct research both within and outside of the classroom, and teachers support them by giving clear examples that help them solve difficulties (Fitriyah & Ghofur, 2021). From the statement above, it can be concluded that PBL is learning that begins with students being faced with a problem in their real life. Then, from this problem, their curiosity arises to study the problem according to the knowledge they have so that students gain new knowledge. Problems become a relay for students so they can learn something that can help their knowledge.

In terms of research and investigations, there are a number of related studies, such as research conducted by Damayanti with the title "Development of teaching materials based on the Kvisoft flipbook maker application using the Problem Based Learning model with a scientific approach" and using the modified Borg and Gall development model for classroom use (Damayanti, 2022). The study "Development of Teaching Materials Using the KVIsoft Flipbook Maker Application for Set Material" by Wibowo and colleagues applies the Borg and Gall development model to create materials appropriate for use in class VII mathematics learning (Wibowo & Pratiwi, 2018). The study "Development of a simple Plane E-Module based on Problem Based Learning (PBL) using the Kvisoft Flipbook Maker Application for Class III Students" was also carried out by Ningtyas, and it received a validity score of 85.82% in the "valid" category (Ningtyas, 2020). based on studies done by earlier academics who talked about creating instructional materials using the Kvisoft flipbook creator program. Compared to earlier study, this research is more recent. It is evident that the third grade was the research subject selected. Thus, in order to develop critical thinking abilities in class III elementary schools, researchers are interested in examining the validity and applicability of instructional materials based on the Kvisoft flipbook creator application with the PBL model. All parties working in the field of education, especially those in primary schools, should be able to use this teaching material to further their knowledge.

Method

Development and research are used in this kind of study. This has the ADDIE development methodology at its foundation. The ADDIE approach model is an abbreviation of Analyze, design, Develop, implement, and Evaluate. ADDIE has been designed according to learning objectives and is often used in learning. Based on studies in the educational sector, the implementation of ADDIE is carried out through student centers. Learning products created by following ADDIE's steps will create effective learning activities and tools (Cahyadi, 2019). The researcher chose this step through ADDIE on the grounds that the work stages arranged in this model are its own advantages, improvements are made to each stage so that in developing teaching materials they can present products that are suitable for application to students. Using a PBL paradigm in class III elementary schools, researchers will create instructional materials based on the Kvisoft flipbook creator application.

In accordance with the ADDIE stage, the researcher observes or conducts field observations to assess the needs of the pupils during the analysis stage. Following that, teaching materials are produced at the design step based on the requirements of educators and students, who are led by the information gathered during the analysis stage. The product that has been designed is developed during the development stage in order to be used in education. Students are used to test the developed product throughout the implementation phase. During the assessment phase, scientists assess the outcomes of the conducted experiments. This study was conducted at SDN 10 Sasai Kandang, SDN 03 Limo Badak, and SDN 01 Campago.

Researchers employ proper data gathering approaches, such as field observations, interviews, questionnaires, and documentation, to gather information or data. The tools employed in this study include validity and practicality sheets for evaluating the instructional materials that will be generated in training, instruments for analyzing the needs of teachers and students, and critical thinking skills assessments for class III SD/MI students. The usefulness of the instructional materials being generated is evaluated in a number of ways, such as its convenience and advantages, the content's quality, and their technical application. The collected data, including validity and practicality surveys as well as teacher and student needs analysis sheets, was examined by researchers. As for the data analysis method employed in this study, it involves analyzing the demands of teachers and students using qualitative descriptive data or by providing data and assertions that are consistent with the original without the need for numerical calculations.

In order to perform expert validity analysis, three experts in their respective fields—one each for media,

material, and language—as validators carry out the process. They then use a Likert scale to analyze the data in multiple steps, starting with assigning a score for There are responses for each topic that range from strongly disagree, to disagree, to agree. Subsequently, total the scores for all validators out of all the indications. Third, applying the Formula 1 to validity values:

$$V=\frac{f}{N}\ X\ 100\% \quad (1)$$

Information :
V = final value of validity
f = score acquisition
N = Maximum Score

The criteria used to determine product validity are as follows:

Table 1. The weight of the validity statement for teaching materials based on the Kvisoft flipbook Maker application

Interval Length	Percentage Score (%)	Category
0-1.00	0-20	Invalid
1.01-1.75	21-40	Less Valid
1.76-2.50	41-60	Fairly Valid
2.56-3.25	61-80	Valid
3.26-4.00	81-100	Very Valid

In the meantime, the researcher provided a questionnaire to two educators, who completed it to rate various aspects of the developed teaching materials using an educator practicality questionnaire. The results were analyzed using a Likert scale to determine the degree of practicality of the materials.

$$P=x\ 100\%\frac{f}{N} \quad (2)$$

Information:
P = Final Practicality Value
F = Score obtained
N = Maximum score

Table 2. The weight of the statement on the practicality of teaching materials based on the Kvisoft flipbook maker application

Intervals	Category
81-100	Very practical
61-80	Practical
41-60	Quite practical
21-40	Not practical
0-20	Very impractical

The instructional materials based on the Kvisoft flipbook creator program are considered practical if the percentage results fall between 61 and 80.

Result and Discussion

The findings of a study conducted in class III primary schools utilizing the Problem Based Learning methodology and Kvisoft Flipbook Maker program to create instructional materials via five stages: analysis, design, development, implementation, and assessment. At the analysis stage, data was collected by conducting interviews with educators at one of the elementary schools in the city of Padang, namely SDN 01 Campago. Based on the interviews, results were obtained regarding the learning process which is still conventional, lack of involvement of students in learning, teachers are stuck with the teaching materials used in the form of textbooks and worksheets without varying the way they teach so that learning still seems monotonous, the importance of training students' critical thinking skills, facilities and the infrastructure provided by the school is quite adequate, such as the availability of projectors, computers and WiFi networks, but it has not been used optimally, in fact it is rarely used in the learning process.

Analysis of the interview results is the first step for researchers in developing teaching materials used at the elementary school level. After the analysis at the initial stage was carried out, the next stage the researcher carried out the analysis stage on the students by asking several questions to the students and obtained the results that in the learning process the students were still passive because the educators were only fixated on textbooks and worksheets so that they had not made the students active and engage with questions that can train students in critical thinking. In learning, students are happy with the display of interactive videos or images when used in learning. Thus, In order to help students develop their critical thinking abilities, it is imperative that educators create instructional materials that make use of the Kvisoft Flipbook Maker application.

The researcher creates the instructional materials that will be produced by basing the design on the findings from the analysis stage as well as the findings from further observations. Using a PBL methodology, researchers created instructional materials based on the Kvisoft flipbook creator tool. One of the pages from the teaching materials later is seen in the Figure 1.

Figure 1. Example of teaching materials based on the Kvisoft flipbook maker application

Using the Kvisoft flipbook creator tool, researchers created instructional materials during the development phase that used a problem-based learning model that was created during the design phase. Next, schedule a meeting with specialists to evaluate the appropriateness of the created instructional resources. Once the instructional materials have been developed, they are reviewed and approved by an experienced team, who also provide comments and suggestions for revision. This instructional material is deemed valid based on evaluation of the final result through exams and completed changes. The following table provides an overview of the findings from product validation tests conducted on instructional materials utilizing the PBL approach in class III primary schools and based on the Kvisoft flipbook creator application:

Table 3. Average value of validators for each validity

Indicator	Percentage	Criteria
Media validation	91.8%	Very valid
Material validation	90.175%	Very valid
Language Validation	983.33%	Very valid

The media expert validation value was 91.8%, the material expert validation value was 90.175%, and the language validation value was 83.33%, according to the validity table above, which includes three assessment elements. The very practical category includes the three assessment aspects mentioned above.

The designed product is used in learning during the implementation stage. Following revisions based on feedback from supervisors and subject-matter experts, class III students at SD 01 Campago tested the instructional materials. This experiment was conducted to determine the viability of developing problem-based learning materials using the Kvisoft flipbook creator tool. Teaching materials based on the Kvisoft flipbook creator program using the PBL approach were labeled as "very practical" after it was discovered that the results for each practicality fell between 81 - 100%.

Table 4. Results of percentage of practicality by educators

Assessment aspect	Percentage (%)	Criteria
Content Quality	96.87	Very practical
Media Display	94.64	Very practical
Technical Use	95.83	Very practical
Evaluation	93.75	Very practical
Average	95.27	Very practical

Teaching materials based on the Kvisoft flipbook creator application using the PBL approach in class III of primary school are considered "very practical" if the practicality results fall between 81 and 100%. The following graph displays data from the examination of educators' practicality.

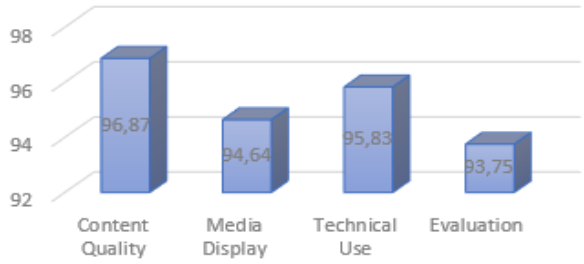

Figure 2. Graph of Percentage of Practicality by educators

The last step in putting the ADDIE development model into practice is the evaluation stage. As guidelines for improvement, comments and suggestions are taken into consideration during this stage of revisions, making the created training materials even better. No significant alterations were made to the instructional materials created for this study.

Conclusion

The teaching materials on topic three, "Objects around me," in class III elementary schools that are based on the Kvisoft flipbook creator program and use a problem-based learning methodology have satisfied the requirements for validity and practicality. Based on the evaluations of 91.8% from media experts, 90.17% from material experts, and 83.33% from language experts, this is the result. The practicality of the generated teaching materials was determined by examining the answers to the practicality questionnaire. In the "very practical" category, educators scored 95.27% on average in the assessment.

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