Development of Flipbook-Based Teaching Materials for Learning in Elementary School's

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Abstract: Abstract: The use of digital teaching materials in the 21st century is considered very relevant to the development of information and communication technology in learning in elementary schools. Good teaching materials are teaching materials that include all the material needed in learning activities. This research aims to develop flipbook-based teaching materials in project activities to strengthen the profile of Pancasila students (P5) in elementary schools. The methodology used in this research uses the ADDIE model (analysis, design, development, implementation, and evaluation). Data analysis techniques use qualitative data analysis and quantitative data analysis. This research was conducted at SD Negeri 1 Langsa City, SD Negeri 11 Langsa City and SD Negeri 2 Seulalah. Based on the research results, the percentage of material expert validation was 88.95% with a very valid category; media expert validation obtained a percentage of 90.57% in the very valid category, while learning design experts obtained a percentage of 86.25% in the very valid category. From the research results above, it shows that this flipbook teaching material is very suitable to be applied as digitalization-based teaching material in the project to strengthen the profile of Pancasila students in elementary schools.

Keywords: Elementary school's; Flipbook; Profile of Pancasila students; Teaching materials

Introduction

The use of teaching materials using information and communication technology in the 21st century is very relevant in learning currently considering that the development of Information and Communication Technology (ICT) in the world of education is growing very rapidly. ICT has improved the learning paradigm from traditional learning to online learning using computers (e-learning), from online learning with computer facilities to mobile learning that can be used via smartphones (m-learning) and is now developing into unlimited and accessible learning. access anywhere (u-learning) (Wibawa, 2016). The advantage of digital teaching materials is that it makes it easier for teachers and students to access flipbook teaching materials anywhere and at any time (Anshari et al., 2016; Fahy, 2004).

The development of information and communication technology means that global society's life continues to change and develop, so that teaching materials in learning activities must always be updated to keep up with the times (Ho et al., 2009; Jungnickel et al., 2009). Teaching materials that always follow current developments can help students to have a broader understanding of scientific developments.

This digital-based teaching material is very relevant which is supported by very fast technological advances and provides space for teachers to be able to develop teaching materials in the form of digitization which can be utilized in learning activities so it is hoped that teachers must also be able to explore new things and new material in the process. classroom learning (Nitsche et al., 2023). Another benefit of digital teaching materials is that they are easy to update according to current scientific developments (Florez-Aristizabal et al, 2019; Kordaki & Gousiou, 2017;). In addition, success in the

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learning process can be achieved if the components developed by the teacher are in accordance with the expected learning objectives. Therefore, learning success can be achieved with the support of teachers in developing teaching materials that can arouse students' passion in the learning process (Hosnan, 2016).

Digital-based teaching materials can be accessed using a variety of devices, starting with laptops, chromebooks, and smartphones. So that later students can access anytime and anywhere. These teaching materials are more cost-effective than using printed teaching materials that must be purchased or borrowed at the library. In addition, digital teaching materials often have interactive elements (Saripudin et al., 2021) which allow students to participate actively in the learning process (Anshari et al., 2016; Jones, 2008), and can be easily updated according to developments times (Botturi, 2019).

Digital teaching materials that always follow technological developments and the realities of people's lives can help students learn in a broader and more comprehensive way. Therefore, teachers must be able to develop teaching materials that integrate with local needs and contexts that exist in the environment around students so that later the developed teaching materials will be close to children's lives and be able to apply them in everyday life.

Good teaching materials are teaching materials that include all the necessary material and can be used more flexibly in learning activities (Febrian, 2020; Jamun 2018). Utilization of digital teaching materials as a learning resource that can make it easier for teachers and students to access teaching materials and makes it easier for teachers to convey information in learning activities (McLaren et al., 2022). Technology has improved the quality of learning by developing teaching materials that are more interesting, interactive, and environmentally friendly using digital teaching materials (Alperi & Handayani, 2015).

Apart from that, things that need to be considered in developing teaching materials are: 1) the teaching materials developed must provide clear objectives and the material packaged more specifically; 2) Teaching materials must explain one competency and sub-competency as a whole; 3) teaching materials can be used independently without relying on other teaching materials; 4) teaching materials must be able to adapt to technological developments; and 5) teaching materials can be understood easily and packaged attractively.

Presentation of material using interesting media can create fun learning situations (joyful learning) (Yulia et al., 2018). The use of digital teaching materials is also effective for achieving learning objectives because it makes it easier for users to access them (Holzberger et al., 2013; Islamy et al., 2020; Lara Nieto- Marquez et al.,

2020). Currently, digital teaching materials are not only accessed using a computer, but can also be accessed using a smartphone, which almost everyone has.

Based on the results of observations and interviews at the three elementary schools that were the target of the research, respondents explained that so far digital-based teaching materials have not been available in schools. In implementing the project to strengthen the profile of Pancasila students, teachers are still confused about its implementation, teaching materials from the government for the project to strengthen the profile of Pancasila students (P5) are not available. The government only determines the themes that will be implemented by schools in P5 activities so that teachers are expected to be able to develop teaching materials that will be applied in the project to strengthen the profile of Pancasila students. Therefore, researchers are interested in collaborating with teachers in the context of developing teaching materials in the form of flipbook teaching materials which can be implemented in projects to strengthen the profile of Pancasila students (P5).

Next, the researcher showed several examples of digital teaching materials that the researcher had developed in the form of flipbook-based teaching materials to teachers as examples of flipbook-based teaching materials that the researcher would develop during preliminary research. The teachers really hope that the flipbook teaching materials will be given to schools so that teachers can later apply them in project activities to strengthen the profile of Pancasila (P5) students in schools. Researchers hope that with the rapid development of ICT, students will be active as digital natives, meaning that students will be accustomed to using technological devices as tools in the learning process in class. Moreover, the Ministry has developed a curriculum that is independent and adaptive to developments in digitalization in schools. With this research, it is hoped that the resulting product can be useful in carrying out learning activities in the classroom.

Based on the background of the problem above, this research is intended to develop flipbook-based teaching materials that can be applied in learning activities in elementary schools. This flipbook teaching material will later be designed for material related to sustainable lifestyles in accordance with the project theme of strengthening the Pancasila (P5) student profile which has been determined by the government in the independent curriculum. So, it is hoped that learning activities that utilize flipbook teaching materials can increase the dimensions of the Pancasila student profile of elementary school students.

Method

Researh design

The research method used is development research (R&D). This development research will produce products in the form of flipbook-based teaching materials and the validity of products developed by researchers will be tested, resulting in products that have novelty value, are efficient, productive, and useful in classroom learning activities (Sugiyono, 2016; Nusa Putra, 2015).

The development model used in this research uses the ADDIE model (Analyze, Design, Develop, Implement, and Evaluate). The subjects in this research are 3 (three) schools that have implemented the independent curriculum in Langsa City, namely SDN 1 Langsa City, SDN 11 Langsa City and SDN 2 Seulalah. Sampling in this research was carried out by purposive sampling with certain considerations and reasons (Sugiyono, 2012).

The procedure for developing flipbook teaching materials using the ADDIE model is presented as Figure 1.
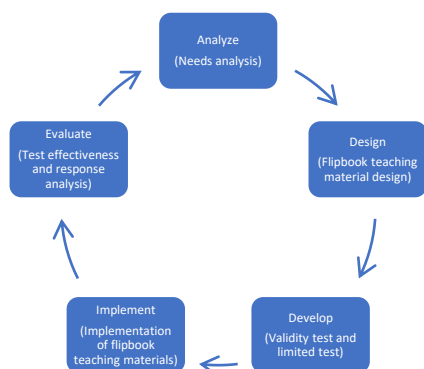

Figure 1. Steps of ADDIE Model

Analyze

At the analysis stage, researchers carried out an analysis of teaching material needs, namely analysis of student characteristics and analysis of learning objectives.

Design

At the design stage, researchers will design teaching materials in the form of flipbook-based teaching materials based on the results of an analysis of the needs of students and teachers. This design stage is reviewed from the needs for developing material aspects, aspects of presentation needs and aspects of linguistic needs.

Develop

At this stage, researchers validate experts to verify and revise the teaching materials that have been designed.

The result of this stage is the creation of teaching materials that are suitable for implementation in schools.

Implement

At this stage, products that have been declared valid and appropriate by validity experts will be tested at the school that is the subject of this research. After the results of the implementation of this teaching material can increase the dimensions of the profile of Pancasila students, this teaching material will be tested widely on a wider range of subjects and then carry out final revisions of the teaching material that has been implemented.

Evaluate

At this stage, the researcher carried out an effectiveness test, but in this article, the researcher only reached the small-scale implementation step for developing validated flipbook teaching materials.

Result and Discussion

Identification of problems

In the Analyze stage, the researcher conducted a problem analysis by conducting interviews and observing the needs of the material to be developed in flipbook-based teaching materials. As for the analyze stage, the researcher collects data and information in the field related to the material needs that will be developed in flipbook teaching materials which include facilities and infrastructure in schools, analysis of student competencies, analysis of student readiness and dimensions of the Pancasila student profile to be achieved.

Based on the results of problem identification, researchers obtained results regarding the need for material to be developed that was more interesting, easy to understand and easy to remember. This is in line with the ideas of Dunlosky et al., (2013) stating that students could learn easily if the material presented is fun, easy to understand and easy to remember.

To attract students' attention, the teaching materials presented will include several interesting photos and simple games. Students will be enthusiastic if the teaching materials developed include several pictures and simple games so that they help students understand the material that is designed concretely (Hung et al., 2012: Lester et al., 2014).

Product Design and Development

The initial stage carried out in the development of flipbook teaching materials is to determine the material that has been obtained at the analyze stage which will be developed in the form of flipbook teaching materials. The material developed in the flipbook teaching

materials is the theme of a sustainable lifestyle. At the design stage, the researcher used the Canva application as an application for designing teaching materials, then the researcher developed flipbooks using the heyzine flipbook application for designing teaching materials and included games in the form of quizziz applications for learning evaluation. Flipbook teaching materials have advantages over other learning media because they don't only present combined text but can also include animation, video, sound and so on. Flipbook is a digital form with three-dimensional ebook technology that can open reading screen pages on the monitor screen (Ayuardini et al., 2022). The design and development steps can be seen as Figure 2.
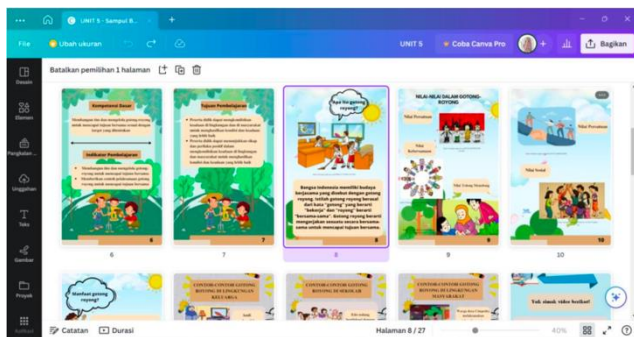

Figure 2. Design flipbook teaching materials using the Canva application.

After the color and background design process using the Canva application, the researcher continued the results of the material, color, and background design by inputting them into the Heyzine flipbook application for further design adjustments and inserting an animated video with a shorter duration. This is in line with the idea expressed by Uluyol & Sahin (2016) in their research that using animated videos with a shorter duration can help maintain students' attention to understand the material presented and can make the material more interesting.

Figure 3. Design flipbook teaching materials using the Heyzine Flipbook application.

Next, the researchers included games for the tasks that students had to complete using a quiz application

that was more interactive and interesting as a learning evaluation instrument. So, it is hoped that later students will be able to measure their abilities through test questions that are already available in the flipbook teaching materials being developed.

The statement above is in accordance with the idea that to design flipbook-based teaching material products, the materials and games presented will be more interactive and interesting. Interesting teaching materials will be achieved through interactive games and simulations in applications that have been developed (Biletska et al., 2021).
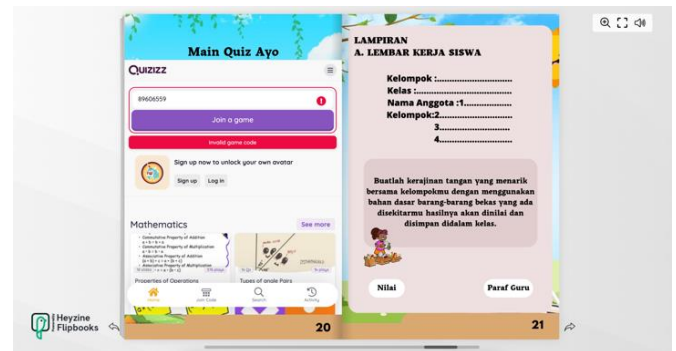

Figure 4. Input the quizizz test application in the heyzine flipbook application.

After the application of the flipbook teaching materials was developed, the researcher conducted a limited trial to see the practicality of what would be applied and ensure that the flipbook teaching materials developed could work well and could be implemented in classroom learning activities. This product practicality test was carried out with the aim of finding out the extent to which the product can be used easily by users. This practicality test is carried out to evaluate products that have been developed in terms of functionality, ease of use and user satisfaction (Byram et al., 2022; I. Rahayu & Sukardi, 2020; Sari & Suryana, 2019).

Presentation of Data Validation Results

Researchers categorize the data into two types; qualitative data to measure the technical quality to which it refers the accuracy of the procedure for using flipbook teaching materials, and Quantitative data to measure the quality of teaching materials refers to the validity of the material expert, the validity of the media expert, and the validity of the learning design expert. Arikunto (2010) formulates how assessment is done by giving scores for each indicator measured on the validation instrument as described below. The results of data analysis will be classified according to the following criteria (Table 1).

Tabel 1. Eligibility Percentage (Arikunto, 2010)

Value (%)	Criteria
100 – 76	Very Decent
75 – 51	Decent
50 – 26	Less Worth
< 25	Unsuitable

The results of the validation test assessment of flipbook teaching material development products according to material experts and practitioners are as follows:

Tabel 2. Recapitulation of Product Assessment Results by Material Experts and Practitioners

Aspect	Score	Category
Content quality	85.55	VV
Presentation	86.67	VV
Language	90.00	VV
Illustration	93.33	VV
Ease of navigation	89.33	VV
Knowledge content	93.33	VV
Information presentation	84.44	VV
Average	88.95%	
Conclusion		Very Valid

Based on the table above, flipbook teaching materials can improve the ecological intelligence of elementary school students by obtaining a score of 88.95% in a very valid category. From the results of the recapitulation of the overall assessment of the validity experts, it can be concluded that the flipbook teaching materials that have been developed and validated can be applied in learning activities in elementary schools with a very feasible category.

As for the results of the product validation test evaluation for the development of flipbook teaching materials according to media experts, they are as follows:

Tabel 3. Recapitulation of Product Assessment Results by Media Experts

Aspect	Score	Category
Illustration use	93.33	VV
Completeness	90.00	VV
Technical quality	96.67	VV
Navigation	90.00	VV
Media integration suitability	84.00	VV
Aesthetic aspect	90.00	VV
Overall function	90.00	VV
Average	90.57%	
Conclusion		Very Valid

Based on the table above flipbook teaching materials can improve the ecological intelligence of elementary school students by obtaining a score of 90.57% in a very valid category. From the results of the recapitulation of the overall assessment of the validity

experts, it can be concluded that the flipbook teaching materials that have been developed and validated can be applied in learning activities in elementary schools with a very feasible category. Furthermore, for the results of the assessment from learning design experts, the data obtained is as follows:

Tabel 4. Recapitulation of Product Assessment Result by Learning Design Experts.

Aspect	Score	Category
Directness	90.00	VV
Communicative	85.00	VV
Interactive	83.75	VV
Average	86.25%	
Conclusion		Very Valid

Based on the results of the learning design expert in the table above, it was found that the learning design expert's assessment obtained a score of 86.25% with a very valid category. From the results of the recapitulation of the overall assessment of the validity experts, it can be concluded that the flipbook teaching materials that have been developed and validated can be applied in learning activities in elementary schools with a very feasible category.

Product Trials

The development of flipbook teaching materials was then tested on predetermined subjects, namely SD Negeri 1 Langsa City, SD Negeri 11 Langsa City and SD Negeri 2 Seulalah.

Conclusion

The conclusions from this research are as follows: (1) Flipbook-based teaching materials are very suitable for application in projects to strengthen the profile of Pancasila students in elementary schools; (2) Flipbook-based teaching materials obtained the following validation results; Based on material expert validation, a percentage of 88.95% was obtained with a very valid category; media expert validation obtained a percentage of 90.57% in the very valid category, while learning design experts obtained a percentage of 86.25% in the very valid category. So, this flipbook-based teaching material is very suitable for implementation in elementary schools. The steps taken by researchers in testing the suitability of the teaching materials that have been implemented are the same as other development research. As done by (Suartama et al., 2020) who stated that in developing teaching materials validation from relevant experts is needed to determine the suitability of the product produced. Likewise, research conducted by (Nahdhiah & Muzaki, 2021) stated that the validation

tests carried out included material experts, media experts and users.

Author Contributions
This research contributes to all parties who use the products that have been produced in learning activities, especially for schools that are the subject of research. In addition, the researchers hope that later the products that have been produced can be used by other educational units in implementing learning activities in elementary schools.

Conflicts of Interest
This published article does not contain any elements of conflict of interest for all parties and it is stated that the article in this publication is the result of an internal research grant from Samudra University.

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