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Digital Picture Storybooks, Can Increase Students' Self-Efficacy and Interest in Learning?

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ABSTRAK

Masih banyak siswa yang mengalami masalah dengan efikasi diri. Masalah ini berdampak pada rendahnya minat belajar. Salah satu cara untuk mengatasi permasalahan tersebut adalah dengan menggunakan media pembelajaran yang tepat. Penelitian ini bertujuan untuk menghasilkan buku cerita bergambar digital yang ditinjau dari aspek kelayakan berdasarkan hasil validasi oleh ahli dan mengetahui kepraktisan serta keefektifan buku cerita bergambar digital dalam meningkatkan efikasi diri dan minat belajar siswa kelas IV SD. Penelitian ini merupakan penelitian dan pengembangan dengan model Borg & Gall. Pengumpulan data dilakukan melalui wawancara, skala, dan angket. Analisis data menggunakan uji N Gain, Independent Sample t Test, Paired Sample t Test, dan uji MANOVA. Hasil penelitian menunjukkan bahwa buku cerita bergambar digital layak digunakan berdasarkan hasil validasi ahli materi dan hasil validasi ahli media serta praktis digunakan berdasarkan hasil angket respon guru dan hasil respon siswa. Hasil dari uji N Gain menunjukkan bahwa terdapat peningkatan efikasi diri dan minat belajar siswa pada kelompok eksperimen yang lebih tinggi daripada kelas kontrol. Disimpulkan bahwa buku cerita bergambar digital efektif dalam meningkatkan efikasi diri dan minat belajar siswa kelas IV SD.

ABSTRACT

There are still many students who need help with self-efficacy. This problem has an impact on the low interest in learning. One way to overcome these problems is to use appropriate learning media. This study aims to produce digital picture storybooks reviewed from the feasibility aspect based on the results of validation by experts and to know the practicality and effectiveness of digital picture storybooks in increasing self-efficacy and learning interest in fourth-grade elementary school students. This research is research and development with the Borg & Gall model. Data collection was carried out through interviews, scales, and questionnaires. Data analysis used the N Gain test, Independent Sample t-Test, Paired Sample t Test, and the MANOVA test. The results showed that digital picture storybooks were feasible to use based on the results of the validation of material experts and the results of validation of media experts and practical use based on the results of the teacher's response questionnaire and the results of student responses. The results of the N Gain test showed an increase in self-efficacy and student learning interest in the experimental group, which was higher than the control class. It was concluded that digital picture storybooks effectively increased the self-efficacy and learning interest of fourth-grade elementary school students.

1. INTRODUCTION

Teachers can improve professional competence in designing effective learning planning, implementation, and management, assessment of effective learning outcomes. On the other hand, teachers should be able to prepare learning media to support the achievement of learning objectives (Safitri Anisa & Dewi Rahmani, 2021; Tafonao, 2018; Zuriah et al., 2016). Interest in learning can be translated as a preference, passion, or pleasure in something. Interest in learning is a very important aspect of learning (Cheung, 2018; Susanto, 2016). With interest in learning, students' attention to learning will increase (Güler ARI, 2017; Permatasari et al., 2019; Setiawan et al., 2020), and in turn will affect learning outcomes (Isnani, 2017; Selasih, 2017). Students' interest in learning that grows through the use of learning media

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will have an impact on liking the learning process. A love for learning can increase student engagement and students understand learning more easily. Interest in learning is a condition that occurs when individuals see the characteristics or temporary meaning of a situation about their own needs. Someone who has a high interest in something usually has an interest (Laine et al., 2017; Susanto, 2016). This makes it clear that interest in learning is the tendency of the soul to an object, generally, it creates a sense of pleasure caused by feeling an interest in something, which means that if interest in learning increases during the learning process, pleasure will arise because students take great interest in the lesson.

In addition to interest in learning, an internal factor that affects learning and learning outcomes is self-efficacy. According to previous study translating self-efficacy is an individual's assessment of one's skills or abilities in terms of doing a task, obtaining goals, and finding solutions to every obstacle he faces (Ghufron & Risnawita, 2016). Self-efficacy is an individual's belief in the competence that exists within him to get through various situations that exist in his life. Self-efficacy is closely related to learning outcomes. A student with the ability to understand learning, discuss the problems he faces to find solutions, and complete assignments well will be directly proportional to good learning outcomes (Siregar, 2019; Yilmaz, 2016). Through experiences of success and failure, people's experiences, persuasive communication, and psychological states, students' self-efficacy can be obtained in the learning process. With qualified self-efficacy and supported by increased interest in learning, it will encourage optimal learning outcomes.

Through the results of observations and interviews with several elementary school teachers in Tamalate District, Makassar City, namely the fourth-grade teacher at Parang Tambung I Elementary School and the fourth-grade teacher at Parang Tambung Elementary School via Whatsapp and directly meeting students' interest in learning and self-efficacy. Most students have difficulty understanding learning because teachers often use improvised books as the only source of learning and apply the lecture method more in learning without emphasizing learning methods that are in line with the 2013 curriculum. In addition, the learning process is not supported by the use of innovative learning media or other sources. With the lack of use of innovative media and learning that is carried out regularly.

The teacher stated that students still often feel confused in understanding civics material regarding pancasila which is read through student books. This is due to the teacher's difficulties in providing instructional media as a supporting tool in brave learning. As a result attention and activities are minimal so that it directs students' interest in the learning process is still low. Low attention from students has an impact on students' focus which is not optimal in understanding messages and content of learning materials, this influences their learning outcomes and only still need guidance from teachers and parents when studying. Interaction between students and teachers as a source of knowledge is also very influential on students' understanding. In addition to attention and interest in student learning, student self-efficacy is also still low. The results of an interview with the fourth-grade teacher at Parang Tambung II Elementary School, regarding courageous learning, out of 28 students 65% only completed the questions given by the teacher. The results of observations at Mallengkeri I Elementary School on showed that students doubted their answers when allowed to present their work. In these coping conditions, the teacher applies a personal approach and counselling guidance to students who experience problems of self-efficacy but are still not optimal and there are still students who do not believe in their abilities.

Technological developments have led to digital devices that are increasingly practical, fast, and efficient. Children are already faced with technological developments (Ngatiman & Ibrahim, 2018; Purwanti, 2017; Suriadi et al., 2021). Teachers should be able to design innovative and fun learning by utilizing technology in learning (Sert & Boynueğri, 2017; Weng & Chen, 2020). Elementary school-age children have also been preoccupied with various technological developments (Annisa et al., 2020; Nuswantari, 2018). The use of digital books is increasing and enabling children to read independently (Avelar et al., 2022; Bai et al., 2022). The advantages of digital books are that they are cheap, efficient, environmentally friendly, and always up to date, that way students can more quickly access accurate knowledge compared to traditional printed books. Picture stories are an effective means of learning students knowledge because the messages are conveyed in an interesting, structured, clear, and fun way (Carvalho et al., 2019; Phoon et al., 2020; Wajdi et al., 2022). In addition, digital-based picture stories can help students achieve the desired learning goals (Rina et al., 2020; Toh et al., 2017). Technological progress is very rapid so various opportunities for innovation in new learning media have emerged, one of which is digital picture storybooks. Previous study conducted research on the use of technology as a tool is common in the era of the industrial revolution 4.0, examples of its application in the field of education (Herlina et al., 2019). The results of the study show that this digital children's story book product is attractive to students in implementing digital literacy in elementary schools.

Digital picture storybooks have several advantages when used in learning. The form of a digital picture storybook has an attractive design by combining text and images that make it easier for children to

understand the various materials presented. Digital picture storybooks are made contextually, learning that is made contextually will stimulate students to relate their initial knowledge to problems that arise in their daily lives. According to previous study state picture story books are books that present text and images that are interrelated with each other, so that the stories that have been presented are more memorable for the reader (Halim & Munthe, 2019). Digital picture storybooks are effectively used as learning aids that support children. Children can learn effectively through pictures using illustrations rather than through explanations or instructions to teach kindness to children (Mohd Rosmadi & Mohamed Isa, 2019; Retnowati et al., 2018). Previous research also explains that the actions taken by a person come from belief in himself (Artino, 2012; Danaei et al., 2020). An individual's ability to complete various tasks can be seen through the self-confidence he has. Other research state that the important point of self-efficacy for students is being able to motivate them to complete various tasks in their lives (Zuya et al., 2016, p. 93). By doing so, it is hoped that the stories and pictures contained in digital picture storybooks can create interactive and fun learning to stimulate the emergence of high self-efficacy in students which helps them feel calm in complicated situations.

Based on the problems that have been described previously there is potential that allows it to be a means of solving problems. For this reason, this research seeks to provide innovative products in the form of digital picture storybooks as learning support which can increase student self-efficacy and interest in learning, it is hoped that students can understand and understand and there is an increase in student self-efficacy and interest in learning. The use of digital picture storybooks in the learning process is an innovation in learning. The use of this technology aims to increase self-efficacy and student learning interest in the learning process and the implementation of the 2013 curriculum which is technology and information oriented. One of the reasons for using digital picture storybooks is that they are easily accessible via cellphones or laptops and do not require storage space and do not require large internet quotas. This research and development aimed at developing digital picture storybooks to increase self-efficacy and learning interest in fourth-grade elementary school students. The difference between this study and previous research lies in the addition of sound and moving images in it. The result of this product is a website link that can be accessed anytime and anywhere.

2. METHOD

The development research uses a research and development model developed by Borg and Gall with ten stages, namely the research and information gathering stages, planning, initial product development, initial field trials, main product revisions, main field trials, operational product revisions, and field trials. operations, final product revision, implementation, and dissemination (Aka, 2019; Divayana et al., 2021; Hamimah et al., 2022). Research design development of digital picture storybooks is show in Figure 1.

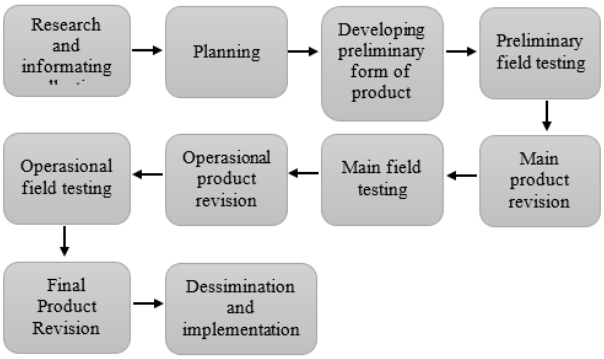

Figure 1. Research Design Development of Digital Picture Storybooks

Data collection techniques through observation, interviews, questionnaires, and scales are to be analyzed descriptive quantitative. Data from expert validation results will be converted to score intervals of 1-5, effectiveness test using independent sample t-test, paired sample t-test, and MANOVA test. Previously, the data was tested through an assumption test which included a normality test and a homogeneity test. Criteria for the level of validation results is show in Table 1.

Table 1. Criteria for The Level of Validation Results

Criteria	Description
5	Very Good
4	Good
3	Average
2	Poor
1	Very Poor

The subjects in this study were validators consisting of two expert lecturers. The research was conducted at SD Tamalate District, Makassar, South Sulawesi, which consisted of Grade I Mallengkeri Elementary School, Parang Tambung I Elementary School, and Parang Tambung II Elementary School. The test subjects in this study were fourth-grade elementary school students in Tamalate District, Makassar, South Sulawesi with the following details: a) main field trials on 8 students, b) main field trials on 15 students, c) operational field trials on 50 students, c) tested the effectiveness of the pre-test on 25 students, d) tested the post-test of effectiveness on 25 students. Validation questionnaires were given to media experts and material experts. Product practicality questionnaires were given to teachers and fourth-grade elementary school students. While sheets of self-efficacy scale and interest in learning are given to students.

3. RESULT AND DISCUSSION

Result

A digital picture storybook developed using the Borg & Gall model. The first stage is conducting research and gathering information, which includes interviewing and distributing questionnaires on the needs of teachers and students. The results of the analysis of students' needs are that they need interesting media and support the learning media subject matter needed according to the characteristics desired by students, namely digital picture storybook learning media. 78% of 59 students chose digital picture storybooks that students liked.

The results of teacher interviews stated that they needed media in the form of digital picture storybooks because children liked stories and pictures, especially if packaged in digital form, more practical, and easily accessible. The second stage is planning, which is an assessment of the design of digital picture books including objectives, themes, and storylines. The research aimed to produce an effective digital picture storybook product to increase the self-efficacy and learning interest of IV SD students. Themes and storylines adapted to the characteristics of fourth-grade elementary school students are presented in the form of material that tells Aru's daily life as a farmer's son which is presented to fourth-grade students. In addition, digital picture storybooks are also adapted to create children's characters who are the same age as the research subjects and their families. The background of the story raised is Aru's daily life and the surrounding environment so that it can make it easier for students to understand the story and strengthen students knowledge of their environment. Determination of data collection techniques and research instruments is also carried out at this stage after the assessment. The learning tools and learning objectives are also analyzed including Core Competencies (KI), Basic Competencies (KD), and Competency Achievement Indicators (IPK) used are presented in Table 2.

Table 2. KD and IPK Used

Basic Competency		Competency Achievement Indicators	
3.1	Understanding the meaning of the symbol's relationship with the Pancasila precepts	3.1.1	Explain the relationship between the symbol and the meaning of the fifth precept of Pancasila
		3.1.2	Analyze attitudes that reflect the values of the fifth precept of Pancasila
4.1	Explain the meaning of the symbol's relationship with the Pancasila precepts as a unit in everyday life.	4.1.1	Determine attitudes that reflect the fifth precept of Pancasila
		4.1.2	Write down 3 examples of attitudes that reflect the values of the fifth precept of Pancasila

The third stage of the initial product development focused on the development of digital picture storybook media and the products developed were then validated by material and media experts to obtain criticism and suggestions for the products being developed to improve the product design before being tested. Development of digital illustrated storybook media on sketches designed through Adobe Photoshop and Adobe Illustrator applications. Aru's story in a digital picture storybook is show in Figure 2.

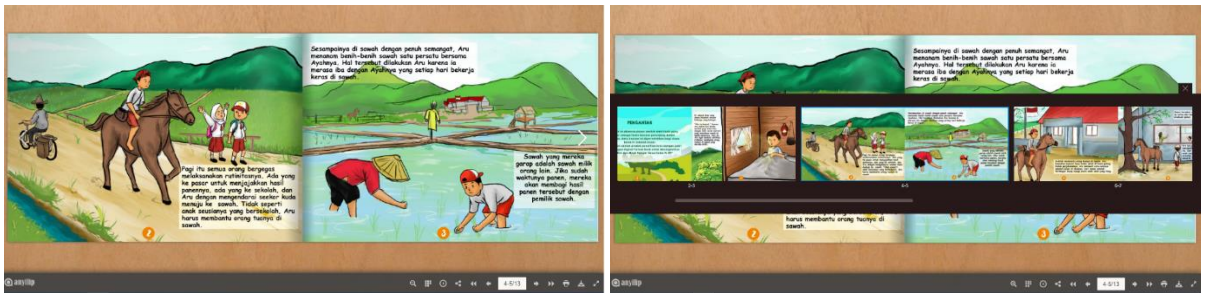

Figure 2. Aru's Story in A Digital Picture Storybook

After the product is finished, the next step is the expert validation process. The purpose of the validation process is to obtain feasibility and suggestions for improvements to the developed media products. The validation results from media experts obtained an average score of 4.0 and material experts obtained an average score of 4.3. Based on the validation results, it can be concluded that learning using digital picture storybook media is feasible to use. According to previous study adapting Vygotsky's theory, reading picture books may greatly support parents' efforts to guide their children's attention and participation (Takacs & Bus, 2018). In detail, the validation results can be seen in Table 3.

Table 3. Expert Validation Results

Indicator	Average	Classification
Media Expert Validation Results		
Book Size	4.0	Feasible
Book Cover Desain	4.0	Feasible
Book Content Design	4.0	Feasible
Product Ease of Use	4.0	Feasible
Functionality	4.0	Feasible
Total Score	4.0	Feasible
Material Expert Validation Results		
Appropriateness of Material	4.2	Very Feasible
Self-Efficacy Ability Facility	4.5	Very Feasible
Learning Interest Facilities	4.2	Very Feasible
Total Score	4.3	Very Feasible

The fourth and fifth stages are initial field trials carried out after the digital picture storybooks have been validated and revised based on input and suggestions from material experts and media experts. The activities carried out while carrying out the trials were teachers and students using digital picture storybook learning media in conducting learning and filling out the response questionnaires given. Based on the results of the initial trial, the results of teacher's response obtained an average score of 4.2 with a very decent category. The results of student responses obtained an average score of 4.1 with a feasible category. The product is then revised through the fifth stage, namely the main product revision based on the suggestions and revisions given. The results of the teacher and student response questionnaire can be seen in Table 4.

Table 4. Results of Teacher and Student Response Questionnaire on Initial Field Trial

Aspect	Average Score			
	Teacher	Category	Student	Category
Display	4.0	Feasible	4.0	Feasible
Content	4.1	Feasible	4.0	Feasible
Benefit	4.5	Very Feasible	4.1	Feasible
Total	**4.2**	**Very Feasible**	**4.1**	**Feasible**

After revision, the product is then tested in the sixth stage, namely the main field trial. Based on the results of the main field trials, the teacher's response results obtained an average score of 4.4 in the very feasible category. Furthermore, the results of student responses obtained an average score of 4.2 with a very decent category. The product is then revised through the seventh stage, namely the

operational product revision based on the suggestions and revisions given. The results of the teacher and student response questionnaire can be seen in Table 5.

Table 5. Results of Teacher and Student Response Questionnaire on Main Field Trial

Aspect	Average Score			
	Teacher	Category	Student	Category
Display	4.5	Very Feasible	4.1	Feasible
Content	4.4	Very Feasible	4.2	Very Feasible
Benefit	4.5	Very Feasible	4.2	Very Feasible
Total	**4.4**	**Very Feasible**	**4.2**	**Very Feasible**

After revision, the product is then tested in the eighth stage, namely operational field trials. Based on the results of operational field trials, the teacher's response results obtained an average score of 4.7 in the very feasible category. The results of student responses obtained an average score of 4.4 with a very decent category. The product is then revised through the ninth stage, namely the final product revision based on the suggestions and input given. The results of the teacher and student response questionnaire can be seen in Table 6.

Table 6. Results of the Teacher and Student Response Questionnaire in the Operational Field Trial

Aspect	Average Score			
	Teacher	Category	Student	Category
Display	4.7	Very Feasible	4.4	Very Feasible
Content	4.7	Very Feasible	4.4	Very Feasible
Benefit	4.7	Very Feasible	4.5	Very Feasible
Total	**4.7**	**Very Feasible**	**4.4**	**Very Feasible**

The next step is distributing sheets of self-efficacy measurement scales and interest in learning to see the effectiveness of the media in increasing self-efficacy and student interest in learning. The self-efficacy scale sheet contains 17 statements while the student's learning interest totals 20 statements. In detail, the results of the pretest and posttest can be seen in Table 7.

Table 7. Pretest and Posttest Results

Student Self-Efficacy				
Class	Average		Gain	Category
	Pretest	Posttest		
Experiment	59.84	76.56	0.66	Medium
Control	59.16	62.96	0.14	Low
Students Interests				
Class	Average		Gain	Category
	Pretest	Posttest		
Experiment	70.76	80.04	0.33	Medium
Control	68.68	72.52	0.09	Low

In the variables of self-efficacy and learning interest in the experimental class, the increase was in the medium category, while in the control class, the increase was in a low category. The difference in the increase in the pretest and post-test scores of self-efficacy and students' learning interest in the control class was lower than that of the experimental class. On the other hand, the increase in the value of students' learning interest in the experimental class that used digital picture story books was also higher than the control class. It can be concluded that the use of digital picture storybooks can increase the self-efficacy and learning interest of fourth-grade elementary school students.

Based on the results of hypothesis testing using independent sample t-test and paired sample t-test on self-efficacy ability data, obtained a significance level of 0.000 <0.05. The results of this hypothesis test indicate that learning with digital picture storybook media is effective in increasing students' self-efficacy. Thus, increased student self-efficacy can be achieved by using digital picture storybook teaching materials. The results of this study are in line with research that the use of picture storybooks in the form of comics affects increasing students' self-efficacy (Sipahutar, 2020).

Based on the results of hypothesis testing using independent sample t-test and paired sample t-test on the data of interest in learning, the significance level of 0.000 <0.05 was obtained. The results of this hypothesis test indicate that learning by using digital picture storybook media is effective in increasing students' interest in learning. The results of the research stated that the use of digital picture book media based on Augmented Reality can stimulate students' enjoyment or interest in learning with various interesting pictures according to the text and the context of the story (Lubis & Dasopang, 2020). In previous research concluded that students were more active and interested in learning by reading stories accompanied by pictures (Ardhiniswari et al., 2020). Based on the results of hypothesis testing using the MANOVA test that has been carried out, the values of Pillai's Trace, Wilks' Lambda, Hotelling's Trace, Roy's, and Largest Root have a significance level of 0.000 < 0.05. The results of this hypothesis test show that learning with the use of digital picture storybook media is effective for increasing students' self-efficacy and interest in learning simultaneously.

Discussion

Learning media is a means for the learning process to run pleasantly and attract students' attention. Learning media has an important role to facilitate students in understanding the learning being taught (Adriana et al., 2020; Handayani, 2022; Lukman et al., 2019). The learning process that does not use media will make students bored in the learning process which will affect the value and knowledge of the students themselves (Nengrum et al., 2021; Tampubolon, 2020). One of the media that can be used is a digital picture storybook. Children engage with stories in electronic rather than paper formats. Previous studies have found that children prefer digital storybooks to print books and exhibit a higher frequency of engagement behaviors when reading digital storybook formats than print books (Ciampa, 2016; Son et al., 2020). Digital picture storybooks can make it easier for teachers and students to achieve learning goals. The complexity of the teaching materials presented to students can become simpler with the use of illustrated story e-books (Putrislia & Airlanda, 2021; Rohma, 2021).

The advantage of this digital picture storybook is that it presents pictures related to students' daily lives. The results showed that students were more interested in learning by using picture storybooks (Rahim et al., 2022; Rahimah & Izzaty, 2018). The use of digital picture storybook media can stimulate students' feelings of pleasure or interest in learning through various illustrations that provide attractiveness and continuity of content within the context of the story. The results of the study found that students felt happy and interested in illustrations in digital picture storybook media (Lubis & Dasopang, 2020; Sumaryanti, 2020). Research findings of previous study state that picture storybook are effective in increasing student interest and learning outcomes (Islami, 2019). If learning activities are carried out online, digital picture storybooks can be a solution for the learning media to be used. And other research shows that picture storybooks are important in a pandemic situation because they can make students interested in learning (Putrislia & Airlanda, 2021). Digital picture storybooks can also help children's understanding (Bus & Anstadt, 2021; Eng et al., 2020; Montag, 2019). Digital picture storybooks are made contextually, and the teaching and learning process is carried out contextually which will stimulate students' understanding to connect their initial knowledge with problems that arise in everyday life. A good understanding will show students' interest (Anggraini et al., 2020; Lindgren & Bleicher, 2005). With the growing interest in learning in students, it will affect their success in completing their responsibilities towards their assignments. The success of students in completing their assignments will affect their self-confidence. Observation of the success of others will also affect the self-efficacy of students who observe. Observation of other individuals' experiences regarding their abilities will give confidence. The results of his observations of other people will influence students' beliefs in making positive decisions for themselves, such as being actively involved in learning. Previous research findings stated that students were active in learning using digital picture storybooks (Rohma, 2021).

The use of digital picture storybooks provides an opportunity for students to ask questions or express opinions and the teacher can give positive feedback at the learning activity stage. In connection with the importance of feedback on self-efficacy, responses from other individuals, for example, teachers influence students' self-efficacy and become another source for developing self-confidence (Sökmen, 2021; van Dinther et al., 2014). So that the teacher always gives positive feedback in the form of praise or a sense of appreciation so that students put more effort into learning so that their self-efficacy increases which affect their ability to complete assignments and responsibility. Anxiety or worry is a form of the overflow of the psychological side of students which is a source of self-efficacy. Teaching media in the form of digital picture storybooks can erode the anxiety and worries of students who are facing learning. The research findings state that a collection of texts in the form of illustrated stories will give positive messages to children and impress children so that they can be implemented properly for elementary school students (Colwell, 2013; Ratnasari & Zubaidah, 2019). The results of previous findings found that

the use of comic-style picture storybooks affected increasing student self-efficacy (Sipahutar, 2020). Other research states that there is an effect of using digital picture storybooks on students' self-efficacy (Chen, 2022; Yang, 2018). With increased self-efficacy, students will automatically participate in learning. The use of pop-up book learning media involves students directly and provides opportunities for students to actively participate in the learning process (Damayanti et al., 2021; Yang, 2018). A collection of texts in the form of stories with pictures will give positive messages to children and impress children so that they are properly implemented for elementary school. An individual's success in completing his task can be seen by how confident he is in his abilities. Previous study state the importance of self-efficacy for students because they can motivate in completing their responsibilities (Zuya et al., 2016). Even in learning activities, the good self-efficacy of a student will help him in undergoing the learning process well.

The implication of this research is to produce learning media in the form of valid digital picture storybooks with very good qualifications that can assist teachers in learning. The use of digital picture storybooks in the learning process will provide direct learning experiences to students through student involvement in using digital picture storybook media. Through this, students' interest in learning will grow so that it will affect their self-efficacy to be more enthusiastic about participating in the learning process and being able to remember the material well. Therefore, the involvement of students during the learning process using this media is very important to note so that the goals of media development can be achieved. The limitations of research on the development of digital picture book media are digital picture book learning media in this study is limited to the theme of my hero, content of PPKn material symbols, and the meaning of the fifth precept of Pancasila, students have never done learning using a digital picture book using a smartphone so that learning is sometimes less conducive, research conducted only limited to measuring self-efficacy and interest in student learning.

4. CONCLUSION

Based on the results of the research and development of digital picture storybook media that has been carried out, it can be concluded that the digital picture storybook media product in this study is appropriate for use in increasing self-efficacy and student learning interest which can be seen based on the assessment of media experts, material experts, response results teachers, and student responses in the initial field test, initial field test, main field test, and operational field test. Digital picture storybooks are effectively used to increase self-efficacy and student interest in learning based on the results of the independent t-test, paired sample t-test, and the MANOVA test.

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