The Effect of Animated Learning Media Using Powtoon on Student Learning Outcomes

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Abstract: This research was conducted to examine the impact of using Powtoon animated learning media on the learning outcomes of fifth-grade students in the subject of Social Studies at Muhammadiyah 5 Porong Elementary School, which previously had limited use of animation in the teaching process. The research method employed was quantitative research with a preexperimental design, specifically the one-group Pre-Test-Post-Test design. The subjects involved in this study were 17 fifth-grade students, selected using saturation sampling. Data collection was done through tests to measure the influence of implementing animated learning media on the learning outcomes of fifth-grade students, involving both a pre-test and a post-test consisting of a 20-item multiple-choice questionnaire. Data analysis was conducted using hypothesis testing, specifically the paired sample t-test, with a significance level of 0.000, indicating that the p-value was < 0.05. This result suggests a significant difference between the pre-test and post-test scores. Therefore, the null hypothesis (H0) was rejected, and the alternative hypothesis (Ha) was accepted. Thus, it can be concluded that the use of animated learning media has a significant impact on student learning outcomes.

Abstrak: Penelitian ini dilakukan untuk menguji dampak penggunaan media pembelajaran animasi Powtoon terhadap hasil belajar siswa kelas V pada mata pelajaran IPS di Sekolah Dasar Muhammadiyah 5 Porong, yang sebelumnya minim menggunakan animasi dalam proses pembelajaran. Metode penelitian yang digunakan adalah penelitian kuantitatif dengan desain preexperimental, khususnya desain one group Pre-Test-Post-Test. Subjek yang terlibat dalam penelitian ini adalah 17 siswa kelas V yang dipilih dengan teknik sampling jenuh. Pengumpulan data dilakukan melalui tes untuk mengukur pengaruh penerapan media pembelajaran animasi terhadap hasil belajar siswa kelas V, yang melibatkan tes awal (Pre-Test) dan tes akhir (Post-Test) berupa kuesioner pilihan ganda sebanyak 20 soal. Analisis data dilakukan dengan uji hipotesis, khususnya uji paired sample t-test, dengan hasil signifikansi 0,000, yang mengindikasikan bahwa nilai p < 0,05. Hasil ini menunjukkan adanya perbedaan yang signifikan antara skor Pre-Test dan Post-Test. Oleh karena itu, hipotesis nol (H0) ditolak, dan hipotesis alternatif (Ha) diterima. Dengan demikian, dapat disimpulkan bahwa penggunaan media pembelajaran animasi memiliki pengaruh signifikan terhadap hasil belajar siswa.

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A. Introduction

Learning is an activity that involves two parties, namely teachers as educators or guides for education, and students as actors in implementing education. Learning involves several aspects including material, learning objectives, learning methods, and learning media used to convey material to students. The existence of renewal in the world of education is carried out in a planned, directed, and sustainable manner to create superior human beings who are ready to compete in the intense global competition (Rahman et al., 2023). One aspect which easily develops learning success is the use of appropriate deepen media knowledge for students and also for a teacher who can use it easily and appropriately. A part of deepen media knowledge with audiovisual subjects is using animated-based digital deepen media knowledge is very easy to applied because it attracts the attention of elementary school students, and the application of animated learning media can also support learning so that it is more modern with the use of this media. By using an appropriate style of understanding science, deepening the knowledge of media can make a good effect in the development when learning (Yhonara et al., 2022). The use of animated deepen media knowledge requires quite high teacher creativity. If the teacher's creativity is low, then the results of animated videos that should make students interested in learning will actually make students not interested and tend to get bored quickly. Compared to the story with the teacher who has high creativity in making animated media, the teacher will try to make animation that attracts his students so that students feel interested and want to learn to get the material, because actually good learning is flexible learning for students and teachers like playing while learning (Putra, 2013).

The problem with applying learning media using deepen media knowledge in the powtoon system at UMP Elementary Schools on October 17 2019 found that the implementation of media science deepening with animation had been carried out in schools, but not using the powtoon application software, but using the macromedia flash software application in Natural Sciences subjects. The application of the media is still very simple, by displaying subject matter, basic competencies, indicators, quizzes, and there is no sound accompaniment to accompany the animated video (dubbing). The software system presented is dubbed Powtoon and has not yet been maximally used and developed in schools, even though the existing system in Powtoon has many parts of supporting animations and many animation templates based on free of charge for teachers to carry out the practice of deepening digital-based media knowledge. The topic of study conducted in this research is grade IV students for deepening the knowledge of Mathematics with a focus on the Perimeter and Area of Flat Buildings, through the process of using the Powtoon system, excellent results are obtained in grade IV Mathematics subjects. In addition, the teachers at UMP Elementary School also gave very good predicates the process of using the Powtoon system-based animation science training facility that have been implemented at UMP Elementary School (Nugraha, 2017).

The process of practicing audio visual learning tools with a focus on animation can help educators, especially teachers, in explaining and implementing curriculum elements,

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and also make students more interested when taught using animated learning media. Because of that the learning objectives will be achieved quickly, so there is no lazy learning for students because learning will be very interesting with the use of animated learning media. The points that are no less important than the application of this deepen media knowledge are as an application, namely to be able to train the quality of human resources so that they are more innovative and also more creative in making learning animations. (Awalia et al., 2019). Bearing in mind the goal of using animated learning media is to make learning more interesting and also easier to understand for students, because with students understanding what is conveyed by the teacher, students can also process material information through their understanding and apply it by answering the questions given at the end of the learning session to measure how well they understand the material that has been taught (Alannasir, 2016).

Supervisors with the scope of focus of Curriculum 2013 are required try to increase creativity in creating a learning environment. Teachers play a good character in the world of education, especially of developing student activities at school, because students need teachers who can help them develop and optimize their talents, skills, or learning outcomes (Sitio et al., 2023). The lack of teacher engagement interaction in guiding students in a conducive and intelligent manner during activities at school has an impact on students of confidence and deepening the means, which ultimately affects curiosity motivation. Lack of motivation makes it difficult for students to be enthusiastic and follow the learning process, especially in lessons with hands-on practice (Putri et al., 2023).

Which requires perseverance and thoroughnes there are lots of learning media that teachers can use during the process of acquiring its subject. One aspect that innovative and exciting media is Powtoon deepen media knowledge. Powtoon learning media is animated cartoon videos that can be filled with learning materials and used as exciting and funny media. This media can make students interested and focused to studying the presentation means by the teacher so all students become easier to understand the material, and learning outcomes will increase (Sari et al., 2021). Powtoon media is one aspect that audio-visual media. With this media, expected all students can implement the explanation in real terms compared to a book system that only explains concepts. In addition, it can also generate motivation to participate in learning activities.

The Powtoon application was created with advanced features in it, which can create various animations according to what is wanted and needed. In this application, several animation features can eliminate student boredom when studying material and raise the spirit of learning. Obviously, the animation in this Powtoon application can attract children's attention to keep paying attention to each lesson (Hasbullah, 2018). Powtoon can improve students' higher-order reasoning skills (Rahmawati & Ramadan, 2021). Powtoon's deepen media knowledge is, in principle, like PowerPoint. However, its presentation is livelier because it combines audio and visual media so that students do not get bored and more effective learning. Powtoon helps students facilitate the understanding of learning materials so that learning outcomes will increase.

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Evidence of the achievement of the student development process with the final reference given is the classification by accumulation after participating in school activities by assessing students' insights, behavior, and abilities or creativity, which are marked by changes in students (Nurrita, 2018). Process achievement is students' results from their efforts to add information, knowledge, and experience. Learning outcomes can measure the extent to which students' abilities and determine what things must be done in the future to obtain maximum learning outcomes (Oktaviani et al., 2018).

In the research that has been done previously, learning activities have been carried out using audio-visual deepen media knowledge of animation from the Powtoon system, through the research conducted it shows that learning improvements have been achieved. Through the results of increasing learning through the application of animated deepen media knowledge it is very influential for a teacher because the application of deepen media knowledge through the Powtoon system app can run properly. The application of animated deepen media knowledge through the powtoon system app does not only cover certain subjects, for evidence social studies and mathematics, but can be applied to all subjects and also all subjects and all classes, both low and high classes at the elementary level. The application of animated deepen media knowledge attracts the attention of students, especially for low grade students where their curiosity is very high, so that the application of animated deepen media knowledge is considered very suitable to be applied in learning.

The results of the success of a science development cannot be separated from the influence of a tool that participates in learning, without exception to the implementation of animation-based media development using Powtoon software which can affect positive changes in student learning outcomes. Through students' interest in the world of technology, a teacher can also use it in improving animated media for in-school activities from powtoon, using powtoon can also facilitate the delivery of material while making learning much more interesting for students at school (Lomban, 2022).

The application of learning media uses patterns animated videos at Elementary School Muhammadiyah 5 Porong needs to be done because of the lack of application of media for the development and application of science with animation systems in social studies teaching and process activities. Through existing problems, researchers seek to apply deepen media knowledge of animated videos using the Powtoon system app so that learning is even more interesting and easier for students to understand. The use of technology is also the reason for researchers to apply animated deepen media knowledge, in order to increase students motivation to learn about natural, artificial features, and the division of regions in Indonesia on social studies subjects. Referring to this, the expected in this study is to find out the influence of animation development media using Powtoon on the final result of student learning processes in grade 5 social studies lessons (Panjaitan et al., 2020).

This assessment is critical to impacting student learning outcomes in the intended field. This study aims to assess any influence obtained directly through the use of animation development media using Powtoon on learning outcomes in grade V social studies subjects

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at SD Muhammadiyah 5 Porong. This study aims to provide real results in the field of education with a focus on aspects of using animated media development using Powtoon on the final grade of social studies subjects. As well as with the aim of motivating teacher performance and creativity, packaging the process of increasing knowledge activities to be more interesting and varied, as well as reducing the impact of skill errors when teaching using Powtoon animation media.

The desired outcome of this study is provide direct progress on student activities outcomes in primary schools. Specifically, it aims to identify the direct effect of using Powtoon system animation development media on the final grade of the social studies process. Also, this study targets to explain in full the insights in the field of education, increase teacher creativity in every student activity, make the process of increasing knowledge activities more flexible and interesting, and overcome possible problems related to outcomes.

B. Method

This assessment uses quantitative research methods with a focus on the type of pre-experimental assessment, called one group Pre-Test-Post-Test. Probationary studies with the aim of identifying influences on certain attitudes or subjects. This study hopes to carry out test results on the influence of animation development media using Powtoon on student learning activities. A one-group Pre-Test-Post-Test design was used for this study. The participation that became the subject of this study consisted of 17 fifth grade students of SD Muhammadiyah 5 Porong. The technique for selecting sample subjects in this study is saturated sampling, namely by categorizing the choices of all members of the population as sample subjects (Sugiyono, 2018). This research was conducted at SD Muhammadiyah 5 Porong.

Quantitative system assessment uses part of the study that aims to obtain reliable and reliable information, while if a qualitative study is tested, it is the data (Hardani et al., 2020). The subject in this interpretation uses help and limits as a measure and researcher of an interesting event from nature or social habits which can be called an interpretation variable (Sugiyono, 2018). This part of the interpretation includes the validation assessment of experts with the process used. In quantitative research, data analysis is carried out after data from all respondents or other sources are collected.

The assessment was followed in a validity of the media experts. When data on the media is considered correct or worthy of being a development media, it will affect the score with a variable of more than 51 which means it shows good results. Validation by explanation experts can determine whether the data is correct or not and the feasibility material as a development media in learning, with a good results in more than 51 score. The next stage of data analysis is to test the validity of the questions using the correlation validity test, reliability test, normality test, and hypothesis testing with the help of SPSS. The following is the One-Group Pre-Test-Post-Test Design research design:

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Table 1. Research Design

Pre-Test	Treatment	Post-Test
O_1	X	O_2

Description :
O_1 : Pre-Test Score
X : Animated Learning Media Using Powtoon Treatment
O_2 : Post-Test Score

The data listed over maps out a two-stage process. The first process is the first test, called the Pre-Test, with results from assessing the ability of student learning outcomes before finally changing the attitude, namely the provision of media. In the second process, the final test, the Post-Test, is given after treatment, namely by using animated learning media using Powtoon. This process has the aim of seeing the final results after getting treatment.

This assessment, which is the independent variable (X), is the use of animated learning media using Powtoon, while the dependent variable (Y) is student score by learning. From scale of chronological categorization of the flow of interpretation carried out from beginning to end.

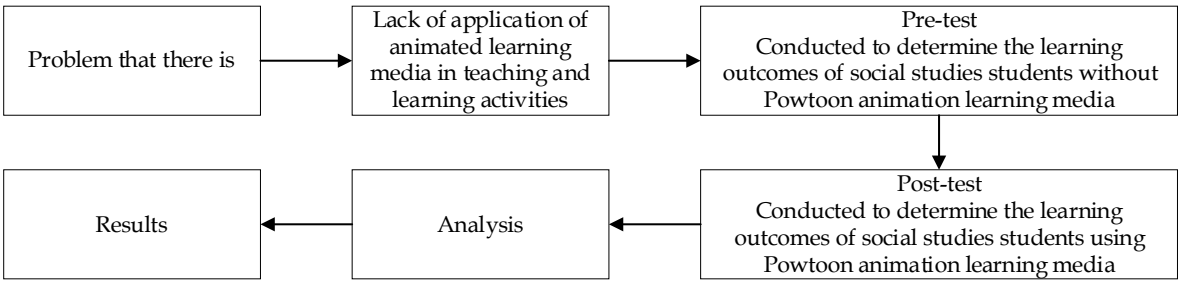

Figure 1. Research Flow

This assessment flow is followed by several levels. Pre-Test was conducted which did not use Powtoon media. After that, the reviewer will direct the subjects to use Powtoon animation development media as part of process. Then, the Pre anf Post have a same questions. The comparison of Post and Pre results will be examined to describe the differences that participate in the research.

C. Result and Discussion

Result

In first process, the Pre-Test was carried out without using direction to identify Powtoon animation development media before the reviewer finally introduced the Powtoon animation learning media to the subject. Data by Pre and Post test will be researched to

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finally be able to determine whether there are significant changes and have a positive impact. The following is the Pre-Test score data:

Table 2. Student Pre-Test Scores

No	Item	Score
1	The Highest Score	86
2	Lowest Value	62
3	Mean	75.76
4	Mode	86
5	Median	78
6	Standard Deviation	7.595
7	Standard Error	1.842

Pre-Test score data is on the table display, showing a highest score being 86 and the lowest being 62. The mean of the Pre-Test data is 75.76, the mode is 86, and the median is 78. The standard deviation is 7.595, and the standard error is 1.842.

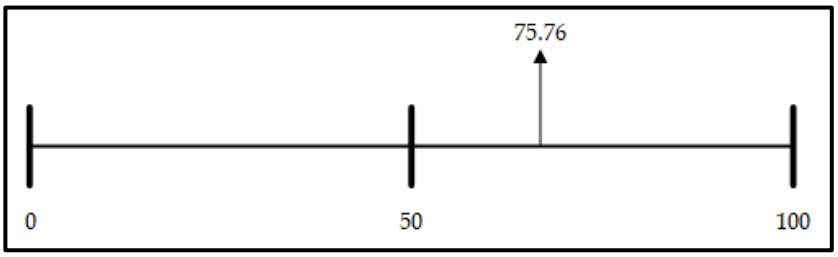

Figure 2. Outstanding Pre-Test Average Score

In next process, the Post-Test is carried out after giving direction by use of Powtoon animation development media with the aim of knowing the results detected on the effect of animation development media using Powtoon. The following table presents the Post-Test score data.

Table 3. Student Post-Test Scores

No	Item	Score
1	The Highest Score	98
2	Lowest Value	74
3	Mean	89.76
4	Mode	84
5	Median	88
6	Standard Deviation	6.996
7	Standard Error	1.697

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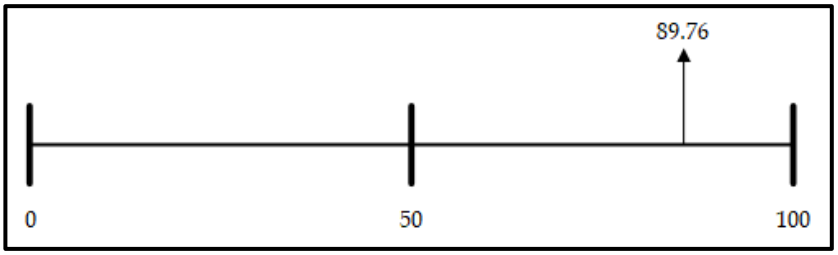

Figure 3. Outstanding Post-Test Average Score

Highest Post-Test is on tabel display high score in 98 and low score in 74. The mean score for the Post-Test data is 89.76, with a mode of 84 and a median of 88. The standard deviation is 6.996, and the standard error is 1.697.

Based on the information provided, the average position of the Pre-Test and PostTest can be described as follows.

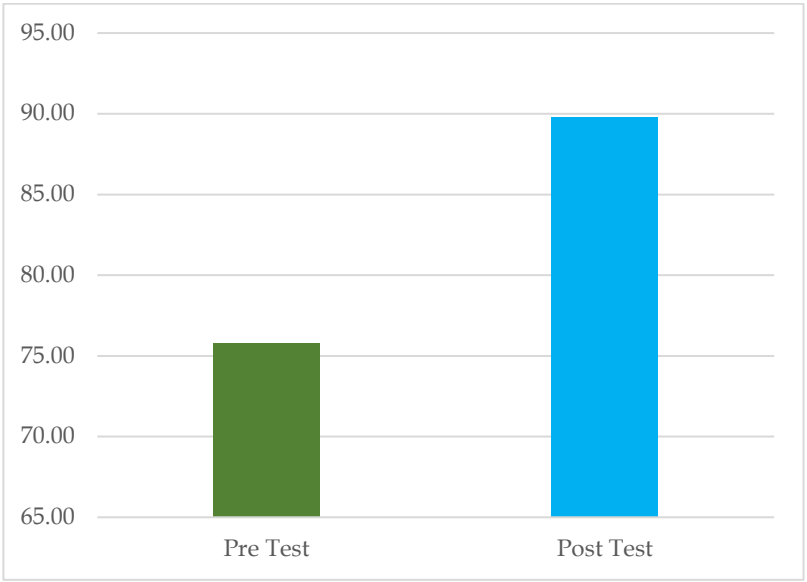

Figure 4. Position of Pre-Test and Post-Test

The average results of data show that Pre-Test plural majority value in 75.76, and Post-Test plural majority value in 89.76. This means that the use of Powtoon shows results in the use of animation development media on student learning outcomes.

The first data parsing shows the results that the assessment of the patency of the data from the means carried out through scale rating sheet and sorted by validators from the Department of Elementary School Teacher Education, Muhammadiyah Sidoarjo University to produce a majority score of 83. This is a fairly high value from the value scaling that has been labeled by the reviewer. This shows that the tool is considered very good and valid, so it is feasible to use in the assessment conducted in Class V on social studies subjects at SD Muhammadiyah 5 Porong.

The validity test results were obtained using the product moment correlation method with the help of SPSS. The following are the results of the validity test:

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Table 4. Validity Test Results

Indicator	Pearson Correlation	Conclusion
1	0.914	Valid
2	0.905	Valid
3	0.688	Valid
4	0.835	Valid

Identify and determine on a table results for each question valid. An issue validated if the calculated correlation coefficient (r_{count}) has a value higher than the critical value (r_{table}). Indicator 1 has validity with value 0.914. Indicator 2 has validity with value 0.905. Indicator 3 has validity with value 0.688. Finally, Indicator 4 has validity with value 0.835. Based on these results, sample size (n) of 17 is 0.482. Can be seen through the results of data, the totalized r_{count} for Indicators 1-4 have values higher than r_{table}.

Table 5. Reliability Test Results

Cronbach's Alpha	N of Items
.835	4

Provided determine the reliability value on this tabel. The scale of importance of the above data is due to having a valid and reliable value instrument that allows for direct categorical and reliable assessment results. If the reliability result is higher than the 0.6 scale, then the instrument is considered reliable. The table shows the result of 0.835, which indicates that the value is higher than 0.6 so it is considered reliable.

The results test on the scale can categorize data that follows a normal scale or not. The table presented next is the result presented from the scale test value. The table below presents the results of the normality test using the Shapiro-Wilk test:

Table 6. Normality Test Results

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Pre-test	.204	17	.058	.931	17	.226
Post-test	.185	17	.127	.889	17	.044

a. Lilliefors Significance Correction

The grouping of the data provided of the normality test using the Shapiro-Wilk Test. Has data charted result of 0.226 and higher than 0.05. Based on Post data which maps the normality data value of 0.044, which is higher than 0.05. The assessment through the data can explained that the results follow a normal distribution.

The sample in this assessment was conducted for the purpose of assessing difference between the Pre and Post which is representative of the data before and after the directive,

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to identify whether there is a direct and impactful change. The following table displays the results of the paired sample t-test using SPSS.

Table 7. Results of the Paired Sample Test

	Paired Differences							
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
				Lower	Upper			
Pre-test - Post-test	-14.000	7.133	1.730	-17.667	-10.333	-8.093	16	.000

The conclusion paired sample data pays attention to qualification significance data of 0.000 which describes that the sig value is lower than 0.05. That is why, the null hypothesis (H0) is not accepted and the alternative hypothesis (Ha) is accepted. With this, identified can significant influence of data using the Powtoon system on student learning outcomes.

Discussion

This assesment has aim proving the effect of Powtoon on development of learning outcomes of fifth grade students at SD Muhammadiyah 5 Porong. The reviewer uses animated learning media because it believes in its ability to interact and keep students focused on attention, make innovations so as not to get bored, help and step teachers in design products and explanations about the media considering that the media era is part of the reviewer in accordance with technological advances and educational patterns. Media development in lessons serves as the main communication between teachers and students, and its involvement is detected to greatly facilitate the material taught to enter and be accepted by students (Ulfa & Nasryah, 2020). The implementation of learning activities using development tools can increase motivation and a sense of effectiveness in teaching and as well as increase student concentration and interest.

Animation development media is a very easy tool in guiding students to digest lessons (Anisa et al., 2023). This tool processes with tools in the form of learning animations that are flexible and follow the topic or theme that is the focus of the lesson. The reviewers used a one-group Pre and Post verification test for study. This assessment activity giving subjects a baseline test before finally allowing them to learn animations using the Powtoon system, followed by a final test of immediate impact. Data grouping observations, with subject of 17 students, outlined that the low score in Pre-Test has 65, the highest score in Pre-Test has 86, the lowest score in Post-Test has 74, and the highest score in Post-Test has 98. Overall value of the Pre-Test variable 75.76 and overall value of the Post-Test variable 89.76. Then through the assessment in Class V of SD Muhammadiyah 5 Porong, it can be seen some impacts on each student who directly increased in exposing confidence in their innovation and thinking, which previously for them was something that was rarely done. The qualifications of the categorized lessons refer to creativity in self-confidence and the many insights gained by students through activities at school. There is a categorical

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breakdown of the student activity results which shows that, broadly speaking, students showed improved performance by two test. Frequency distribution of Pre-Test results a center variable value of 75.76, with a max of 86 and a min of 65. Not only that, the Post-Test score has a center variable value of 89.76, max score of 98, and min score of 74. Thus, direct use of animation development media using Powtoon can clearly improve student learning outcomes. The sample resulted in a significance value of 0.000 which indicates that the sig value is smaller than 0.05. The research hypotheses were formulated as follows:

H_0 : There was no change in student learning outcomes after using animated learning media using Powtoon.

H_a : After using Powtoon to create animated learning media, students show increased learning outcomes.

The analysis resulted in the rejection of H_0 and the acceptance of H_a. Thus, using animated learning media using Powtoon significantly affects the development of student learning outcomes among Class V at Muhammadiyah 5 Porong Elementary School.

The research conclusion that implementing animated learning media using Powtoon positively action to student learning outcomes, as evidenced by the data analysis results. These findings align with previous research conducted by (Basri et al., 2021). Where can boost student learning motivation and be used tool in the online class, indicating a significant improvement in student learning outcomes. Similar findings were reported by (Razi, 2021), who also observed improved student learning outcomes of animated learning media using Powtoon. Additionally (Lestari et al., 2022). There is also research conducted by (Lubis et al., 2023) which shows that there is an increase in the use of the results of the feasibility and effectiveness of powtoon based animated videos in elementary school. The last research conducted by (Purnama et al., 2022) showed that the use of using powtoon media can make it easier for students to understand the material.

D. Conclusion

Resulting in the conclusion of the assessment process, using an intermediary tool and animation system developed with instant Animaker makes it practical for teachers to use in the process of delivering material selection. Through the description of the evaluation, the ease of using and playing the animation, the results of the benefits that get a good impact and high success. In the final conclusions of getting this classification, the developer has made improvements and developments, although the results obtained do not need to be corrected, but the reviewer thinks about the possibility of changing the basic content. And final evaluation of the ease each animation concept in Animaker is firmly supported by the animation concept is approve so that it will be easy to use.

This interpretation has shown positive final conclusions for students and teachers. So in the activity process, Powtoon learning makes students easily confident to play creativity and imagination through writing. In addition, teachers find it easier to use animated learning media, because it can be created using applications such as Renderforest.

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Possibly is recommended future research to further assessment of the use of animated media development with better and more interesting variations. By using animation development media, it is possible that students will be more confident on the creative side so that they can show higher interest and enthusiasm, which leads to improved student learning outcomes in elementary schools.

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