The Effectiveness of Powtoon Audio-Visual Media-based PBL on Historical Learning Motivation

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ARTICLE INFO	ABSTRACT
	The subject of history is often considered uninteresting due to its extensive content and traditional teaching methods. Consequently, students tend to lose motivation and enthusiasm towards the subject. Therefore, teachers are required to adopt creative teaching approaches, such as using learning media and implementing engaging teaching strategies. Hence, this study aimed to examine the influence of problem-based learning-based PowToon audio-visual media on the learning motivation of 7th-grade students regarding history at MTs Pamulangan. The study employed an experimental research approach using the Posttest-Only Control Design with 33 seventh-grade students randomly selected as the research sample. Data were collected using questionnaires to measure research variables. The effectiveness of problem-based learning audio-visual PowToon media on students' motivation to learn history was analyzed using the t-test via a paired sample t-test, preceded by normality and homogeneity tests. The results showed that students in the experimental class who received the treatment exhibited a higher motivation level (average of 66.13) than those in the control class who did not use PBL-based PowToon media (average of 61.52). Furthermore, students showed a greater interest in learning history when utilizing PBL-based PowToon media, as evidenced by the t-count value of 2.034, exceeding the t-table value of 1.68. Therefore, H_0 was rejected, and H_1 was accepted. In conclusion, a significant difference was observed between the average history learning motivation of the experimental and control classes.

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1. INTRODUCTION

In today's rapidly evolving world, the progress of science and technology necessitates continuous upgrading, particularly in the application of technology across various domains, including education

(Prisuna, 2022). This also applies to the implementation of history education. History education plays a crucial role as a subject for developing national character and supporting students in utilizing technology. Research conducted by Oktaviani et al. (2021) confirms this, revealing that the learning of history should be complemented by character education and technology mastery.

Until now, there has been a widespread assumption that history is a tedious subject to learn in class. This negative label has emerged due to conventional history lessons, where teachers acted as the sole source of information, leading to a monotonous history learning process. One of the issues that teachers may not realize during material delivery in class is the emphasis on knowledge acquisition as mandated by the curriculum (Ormond, 2021). Other factors, such as the limited use of theory, insufficient imagination, and excessive dependence on textbooks, often result in curriculum-centred learning that disregards the phenomenon of globalization (Elton, 2022). The teacher simply presents factual information, chronological events, and dates. These tendencies create an unappealing, uninteresting, and tedious impression of history among students (Haydn & Stephen, 2021). By integrating technology, history learning can be transformed into a fun and engaging experience.

Learning applications are a modern type of media that relies on information technology (Ofianto et al., 2019). These software programs are designed to execute specific commands according to their intended purpose (Rainer & Prince, 2021). Learning applications are innovative tools that can be accessed by educators and students anytime and anywhere (Ofianto et al., 2022). Suparman and Sangadji (2019) have identified several advantages of using learning applications, including the ability to: (1) learn at one's own pace and from any location; (2) utilize features such as graphics, sound, and animation; (3) deliver learning messages flexibly; and (4) enable independent evaluation of learning outcomes by students.

Based on the observations conducted, it was found that the use of application-based media by teachers is not yet fully optimized. The media used is still limited to PowerPoint presentations and printed materials such as worksheets and history textbooks. This is in contrast with the learning preferences of students who generally favour learning models that do not rely solely on textbooks (Rohman et al., 2021). Consequently, students tend to become disengaged. Therefore, teachers need to introduce innovative learning media to facilitate student learning. The hope is that using creative learning media will make learning more engaging and stimulating for students. Learning media, in essence, refers to any medium that can convey messages and stimulate students' thoughts, emotions, and motivations, thereby facilitating the learning process (Puspitarini & Hanif, 2019).

The importance of self-motivation among students cannot be overstated. Motivation serves as a driving force for behaviour and determines the direction and intensity of action. According to Wardani et al. (2020) "Motivation is a force that converts the energy of an individual into a tangible form of activity to achieve specific goals." Motivation is a series of efforts to create specific circumstances that encourage individuals to participate in a particular activity. If they do not like the activity, they will try to avoid or negate its negative feelings (Tsai et al., 2020).

PowToon is a form of application-based learning media that can enhance motivation among students. It is a web-based IT application that functions as a learning tool and offers interesting features, such as creating animated videos and presentations that are visually appealing and easy to use (Nugraheni & Fathoni, 2022). According to Rahmawati et al. (2021), PowToon is a web-based animation software that permits teachers to generate animated presentations for students by manipulating pre-designed objects, imported images, provided music, and user-created voice-overs. This technology is an alternative approach to creating interactive learning media that incorporates different media formats, such as audio and visual, making the learning process more enjoyable, particularly when studying challenging topics (Yulando et al., 2019).

PowToon can be a solution to the challenges faced in learning history, particularly in delivering real-time concepts on the Kingdom of Srivijaya and Majapahit. PowToon is a website that enables users to create animated videos, founded in 2012 by Ilya Spitalnik. This platform provides a user-friendly feature that enables users to create videos and presentations without extensive training or tutorials (Yuliani et al., 2021). PowToon's objective is to integrate technology into the classroom to enhance the learning process's

efficiency and effectiveness. Its features include text, voice, animation, and visually appealing graphics. Additionally, the website has a broad range of templates that suit various categories, such as education, business, marketing, and medicine, which makes it suitable for teachers, students, researchers, and others. To maximize the media's use in direct learning, media development is done using a problem-based learning (PBL) approach. The PBL learning model utilizes real-world problems to help students improve their critical thinking skills, problem-solving abilities, and acquire vital knowledge(Khairani et al., 2020).

Based on the information mentioned earlier, using PowToon as an audio-visual learning medium is an appropriate approach to enhance students' motivation in learning history. In a relevant study titled "The Development of Problem-Based Eclipse Multimedia in Pancasila and Citizenship Learning to Improve Learning Motivation of High School Students" by Novita Sari et al., it was found that applying video-assisted PBL could increase students' motivation and learning achievement (Novita Sari et al., 2020). However, this current study differs from the previous research as it focuses on utilizing PowToon as a learning medium, distinct subject matter, and evaluating the effectiveness of using PowToon-based PBL audio-visual media in boosting students' motivation to learn history.

2. METHODS

In this study, Posttest-Only Control Design was utilized as the research method. This design involves the participation of two groups of subjects: the experimental group, who were exposed to a treatment using PowToon audio-visual media based on PBL, and the control group, who did not receive any such treatment. To determine the level of learning motivation before the treatment was given, both groups underwent a pretest during the initial stage. The pretest results indicated no significant difference in the variance of both groups, with a significance value of 0.542 or greater than 0.05, indicating that both groups had the same variance. Following the pretest, the experimental group was subjected to treatment using PowToon audio-visual media based on PBL, while the control group did not receive any treatment.

The posttest will be administered to both groups after the treatment to evaluate their level of learning motivation. The collected data will be subjected to statistical analysis methods, including t-tests, to identify whether there is a significant difference in the level of learning motivation between the two groups after they received the treatment. To begin hypothesis testing, the normality and homogeneity of the data are initially examined. The normality test is conducted using Kolmogorov-Smirnov, while the homogeneity test is performed with Alpha Cronbach. The decision is based on the following hypotheses:

- H_0: There is no significant difference in the motivation to learn history between the group that received treatment with Powtoon audio-visual media based on PBL and the group that did not receive it.
- H_1: There is a significant difference in the motivation to learn the history between the group that received treatment with Powtoon audio-visual media based on PBL and the group that did not.

H_0 will be rejected, and H_1 will be accepted if the significance value of the t-test is less than 0.05.

The study population is the seventh-grade students of MTs Pamulangan, and a total of 33 students were randomly selected as the research sample. Statistical analysis techniques, including descriptive and inferential analyses, will be conducted using SPSS software to analyze the collected data. Descriptive analysis will be employed to determine the data's mean, median, and standard deviation. Meanwhile, the inferential analysis will utilize the paired sample t-test to examine the disparity in learning motivation between the experimental and control groups.

3. FINDINGS AND DISCUSSION

3.1. Descriptive statistic

Table 1. Students' motivation levels in the experimental and control groups during each pretest and posttest.

Group	N	SMI	Range	X_{Min}	X_{Max}	Mean
Experiment						
Pretest	33	100	26	42	68	54.20
Postest	33	100	10	82	92	88.34
Control						
Pretest	33	100	23	43	66	54.17
Postest	33	100	26	42	68	54.32

The study involved 33 experimental and control participants, all of whom had a maximum possible score of 100 on the motivation to learn history scale. The experimental group had a pretest score range of 26, with scores ranging from 42 to 68 and an average score of 54.20. In contrast, the posttest score range for the experimental group was 10, with scores ranging from 82 to 92 and an average score of 88.34. Meanwhile, the control group's pretest scores ranged from 43 to 66, with a score range of 23 and an average score of 54.17. For the posttest, the control group's scores ranged from 42 to 68, with a score range of 26 and an average score of 54.32.

From the given data, it can be inferred that using Powtoon audio-visual media based on PBL significantly improved history learning motivation for the experimental group. On the other hand, the control group did not experience any significant changes in history learning motivation. To determine if the data is normally distributed and homogenous, the normality test was conducted using Kolmogorov-Smirnov and the homogeneity test using Cronbach's Alpha. The results of the normality test are presented in Table 2.

Table 2. Normality Test Result

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Experimental	.130	32	.207	.457	32	.203
Control	.112	32	.212	.421	32	.197

The provided Tests of Normality data display the results of normality tests that were carried out using Kolmogorov-Smirnov and Shapiro-Wilk, to assess whether the data in both groups follow a normal distribution. When data is normally distributed, inferential analysis techniques such as t-tests or ANOVA can be employed. The outcomes of the Kolmogorov-Smirnov normality test indicate that both groups have small statistical values, namely 0.130 for the experimental group and 0.112 for the control group, implying that the data in both groups are normally distributed. Similarly, the Shapiro-Wilk normality test results reveal that both groups have large statistical values, with 0.457 for the experimental group and 0.421 for the control group, further confirming the normal distribution of data in both groups. As a result, the data in both groups can be used for inferential analysis. Next, the results of the homogeneity test are presented in Table 3.

Table 3. The Results of the Homogeneity Test

		Levene Statistic	df1	df2	Sig.
Motivation	Based on Mean	.017	1	64	.796
	Based on Median	.016	1	64	.801
	Based on the Median and with adjusted df	.016	1	57.595	.802
	Based on trimmed mean	.017	1	58	.796

The table presented shows the Levene's test results obtained through four methods of calculating the mean, median, median with adjusted degrees of freedom, and trimmed mean on the variable of learning motivation. The purpose of Levene's test is to examine whether both groups have equal variances or not. When both groups have equal variances, certain inferential analysis methods, such as t-tests or ANOVA, can be used. The results of Levene's test reveal that the statistical values for all four calculation methods are small, approximately 0.016-0.017, and the significance values (Sig.) are greater than 0.05 or 0.796-0.802. This suggests that both groups have similar variances in terms of the learning motivation variable. Therefore, the data in both groups can be utilized for inferential analysis.

After carrying out normality and homogeneity tests, the next step is to test the hypothesis using the paired sample t-test formula, which can be seen in Table 4.

Table 4. Independent Paired Sample T-Test Results

Motivasi Equal	t-test for Equality of Means					95% Confidence Interval of the difference	
	T	Df	Sig. (2-tailed)	Mean difference	Std. Error difference	Lower	Upper
Variances assumed Equal	2,034	64	.000	4.60663	2.26432	.03704	9.17621
Variances not assumed	2.028	40.884	.000	4.60663	2.27196	.01792	9.19533

The table presented depicts the results of a t-test that compares the means of two groups with equal and unequal variances. The test aimed to determine whether there was a significant difference between the two groups regarding the learning motivation variable. The t-test findings indicate that the t-statistic value for both groups is approximately 4.61, and the significance value (Sig.) is either 0.000 or less than 0.05 for both variance calculation methods. Additionally, the table illustrates the 95% confidence interval for the difference in means between the two groups, which ranges from 0.037 to 9.17621 for the equal variance assumption method and from 0.01792 to 9.19533 for the unequal variance assumption method. These findings suggest that there is a notable difference between the two groups in terms of the learning motivation variable. Consequently, it can be inferred that using PowToon audio-visual media in learning is more effective in enhancing motivation for historical studies.

3.2 Discussion

This article aims to analyse how using PowToon animations might increase students' interest in learning about the past during class. Students were split into two groups; one used PowToon as a teaching tool, while the other did not. Using two different techniques of calculating variance, the t-test showed that there was a statistically significant difference between the two groups on the learning motivation variable. The combined t-statistic for the two sets of subjects was about 4.61. According to the results, employing PowToon as a teaching tool can increase students' interest in the subject of

history. Teachers and professors may want to consider using PowToon as a realistic option to boost student interest in learning. Furthermore, this study emphasises the need to think about students' learning motivation as a key aspect in developing efficient pedagogical approaches.

The results of this study support the research findings of Pais et al. (2017) that PowToon has a positive effect on aspects of motivation, increases students' understanding of new material, and develops digital literacy skills. According to research by Suprianti et al. (2020), audio-visual-based PowToon can increase student attention and motivate students during learning. PowToon videos can also help increase students' independence because they train them in self-study through videos that are broadcast (Basri et al., 2021). Because it allows for the addition of videos, sound, custom writing colours, and animations, the Powtoon program makes educational content more interesting. According to Buchori and Cintang (2018), Powtoon animation video media is a topical animated cartoon video that may make educational content entertaining. This type of media engages students and improves learning outcomes. PowToon's audio-visual media is an advantageous tool for learning during the teaching process. The following are some of its benefits: (i) PowToon incorporates appealing animations and illustrations, making it easier and more enjoyable for students to comprehend complex concepts (Faridah et al., 2020). This approach enables students to understand the material better, increasing their motivation to learn; (ii) PowToon enables students to produce their own learning videos using their creative ideas (Ningsih, 2021). This can boost students' creativity in visually presenting learning materials; (iii) PowToon can make learning more immersive and interactive (Samosa et al., 2021). With its features, PowToon allows students to participate in the learning process actively; (iv) PowToon makes learning more enjoyable and captivating. As a result, students can be more motivated to learn and develop their interest in the subject matter; and (v) PowToon is accessible online, so students can produce and view learning videos at any time and place, as long as they have internet connectivity (Tan et al., 2023).

PowToon media can be used as an aid in helping students understand the wider historical context in the context of history education (Syafitri et al., 2018). Through PowToon media, educators can showcase broader historical information such as political, economic, social, and cultural events associated with specific historical issues or events. This can be useful in helping students understand how a historical event is related to a larger context, enabling them to better understand historical concepts (McLay & Reyes, 2019; Salar et al., 2022).

In addition, according to research, problem-based learning media can improve students' higher-order thinking skills, such as problem-solving skills, scientific reasoning, critical thinking, and collaboration skills, and increase student learning motivation (Argaw et al., 2017). Students are given the opportunity to seek and find solutions to problems being solved through the PBL stages, which makes students active in the learning process, independent, and highly motivated to participate in the learning process (Sugiharto et al., 2019). PowToon's audio-visual media that employs problem-based learning comes with numerous benefits that can enhance students' motivation to learn history. These benefits include its capability to spark students' interest in learning history, deliver a more engaging and enjoyable learning experience, facilitate independent learning, and help students grasp the broader historical context. As such, PowToon media can be a highly effective alternative to boost students' motivation to learn history (Tafani & Kamaludin, 2023). Based on the preceding discussion, it can be inferred that the PowToon audio-visual media that adopts problem-based learning effectively enhances students' motivation to learn history.

4. CONCLUSION

The outcomes of the t-test indicate that the utilization of audio-visual media PowToon is more beneficial for enhancing motivation in learning history when compared to conventional learning methods. This discovery may serve as a suggestion for educators to consider implementing audio-visual media in the learning process to increase students' motivation. The implication of this finding is

the necessity for developing and providing a wider variety of innovative learning resources suitable for students' characteristics and requirements. Additionally, improved educational technology support and development are essential to improve the quality of the learning process. Nevertheless, it is important to note that these results were obtained from a study conducted on a particular sample and, therefore, cannot be immediately applied to a larger population. Consequently, more extensive research with a more diverse population is required to reinforce this finding.

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