

The effect of animation-based learning on young learners' English spelling ability

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Abstract

The challenge students face when learning English vocabulary is spelling. The difficulty stem from differences in the spelling and pronunciation of English words, inconsistent spelling rules, and the similarity of certain words. This study examines how animation-based teaching methods can improve spelling skills among young learners in Indonesia, particularly in the context of English language learning. Implementing a quantitative approach with One-Group Pretest-Posttest Design, this study observed the teaching of English spelling to the four-graders using animation-based teaching method. Prior to the implementation of the method, an oral pretest was given to measure for the participants' initial vocabulary and spelling skills. Following the treatment, an oral posttest was given. The data collected were analyzed using nonparametric Wilcoxon Signed Rank Test to answer the research question. The data analysis results showed that animation was highly effective as a teaching resource. By combining visual and auditory elements, animation created a rich learning environment that helped students understand difficult spelling rules. The findings suggested that the use of animation not only increased students' enthusiasm and engagement but also significantly improved their spelling proficiency. This study highlights the effects of using animation-based methods to transform English language learning for children and encourages educators to adopt this innovative approach to achieve better learning outcomes.

Keywords: Animation-based learning; young learners; English spelling ability; English language teaching; teaching English to young learners

INTRODUCTION

The influence of globalization on the education sector, especially in teaching English in Indonesia, increasingly highlights the importance of mastering English as an international language. English language teaching begins early in elementary school with the aim of improving students' overall language skills and developing students' communication skills to face global challenges. In teaching English for young learners (TEYL), the importance of the teacher's role is seen in his ability to present material with creativity that is appropriate to the characteristics of young students. When considering English language teaching strategies for young learners, teachers must create interesting and enjoyable learning (Juhana, 2014). Overall, the success of education and teaching, especially in teaching English to young learners, depends on the creativity and quality of teachers and their understanding of students' needs. Young learners have unique characteristics in the learning process, including in learning English. They are generally faster at absorbing information and have high curiosity, but they also need creative and interactive learning methods to maintain attention. The cognitive abilities of children at this age are still in the developmental stage, so language learning must be adjusted to their level of understanding and abilities. In learning English,

children learn more effectively through fun activities, such as games, songs or interesting visuals. This helps them more easily recognize and understand the basic elements of language, including vocabulary.

One of the main goals of mastering this language is to learn vocabulary which is the main basis for written and oral communication. However, the challenge students face when learning vocabulary is spelling. These difficulties stem from differences in the spelling and pronunciation of English words, inconsistent spelling rules, and the similarity of certain words. Students often make mistakes in determining the correct spelling, so practice and in-depth understanding are needed to overcome this problem. Similar letters or words are pronounced by changing other letters making them difficult to write correctly. When the word is said once, the student may be at a crossroads and need to rewrite the word (Bajracarya Manju 2012). This problem arises due to differences in spelling and pronunciation of English words, conflicting spelling rules, and the similarity of some words. Students often make mistakes in determining the correct spelling, so they require in-depth knowledge to overcome this problem. Words consisting of one letter or a combination of letters can be pronounced differently by changing one letter, making them difficult to spell correctly. Students may be confused when pronouncing the word, but write it exactly as it is pronounced.

The importance of a deeper understanding of these differences cannot be overstated. Students should be strengthened with learning strategies that focus on understanding spelling patterns, as well as listening and writing skills. This way, spelling challenges can be better identified and resolved. Using innovative learning methods such as word games, educational applications, or interactive activities increases student motivation and participation in the learning process. Emphasis on the context in which words are used in sentences and the introduction of pronunciation variations will also really help students build confidence in spelling correctly. Over time, students who receive adequate support and practice will be better prepared to deal with the complexities of English in a more effective way. To overcome this problem, interesting spelling teaching methods are needed. One effective approach is through the use of education-based applications that combine visual and sound elements that can help students more easily associate pronunciation and spelling. By using interactive and interesting media, students can learn to spell more effectively and have fun.

Media plays an important role in language learning. There are three types of educational platforms: audio, visual and auditory. According to Briggs, Gustafson and Tillman (1991), all physical facilities, including printed and audio materials, as well as tools that can convey information and motivate students to learn, are called media. The aim of this program is to help teachers when understanding is difficult to explain. In other words, the role of media is to make it easier for students to understand information. Therefore, teacher communication must be appropriate so that students can understand the explanation. Media is an important thing in the learning process, especially for teenagers. This is because teaching younger students is more difficult than older students. Educational platforms are very helpful in teaching young learners. For children, media is not only traditional but also technological. Examples of traditional media include toys and educational materials such as dolls, puzzles, and flash cards. On the other hand, high-tech media can be videos, music, etc. AChildren and teenagers frequently engage with interactive technologies like MP3 players, television, and films as a primary leisure activity. Especially for young students born between 1990 and 2010, known as Generation Z, according to Simler and Grace (2017) is the digital generation. Digital media has become an integral part of their lives and has changed daily activities, communication and learning. Digital media not only provides many sources of information, but also provides opportunities for students to participate in learning. For example, the use of videos, educational games and interactive applications can increase student motivation and

interest. Additionally, digital media can support cooperative learning, allowing students to interact and learn with their peers via online platforms. Therefore, the use of digital activities in education not only makes the learning process interesting and relevant for students, but also creates an environment that encourages the development of 21st century skills such as critical thinking, creativity and collaboration.

One innovative approach that has attracted attention in recent years is animation-based learning. According to research by Rustambekovna & Adambayevna (2020), video-based learning can change the role of the classroom from passive teaching to dynamic teaching. This method utilizes visualization and interaction through digital media to present learning material in a more interesting and enjoyable way for students. By using animation media, students are not only invited to learn through text and sound, but also through visual displays that strengthen their understanding of the material. Animation offers many benefits in learning, especially for children. Animation-based learning can increase student engagement, improve memory, and help them understand abstract concepts better. In the context of learning English, the use of animation can make it easier for students to understand the relationship between the sound and spelling of words. Animated visualizations showing letter or syllable changes can help young students remember spelling patterns, especially when the spelling does not match the pronunciation, which is often a source of confusion. Animation-based learning also offers a more interactive approach than traditional methods. With this, students can see directly how words are spelled correctly, hear their pronunciation, and interact with the media through various exercises presented in a game or challenge format. This not only improves their spelling skills, but also builds confidence and motivation in learning English. The use of animation as a medium for student learning can also provide teachers with the opportunity to create a more dynamic learning atmosphere, tailored to the needs and interests of young students.

Although numerous studies have discussed the importance of English language teaching for young learners (TEYL) and highlighted the role of teachers' creativity, learning media, and students' characteristics, there remains a limited focus on addressing young learners' *spelling difficulties* through innovative, technology-based approaches. Previous research has mostly examined general vocabulary acquisition strategies or traditional media such as flashcards, songs, and games, without emphasizing the integration of digital and interactive media tailored to learners' cognitive development. Moreover, while digital learning has been widely promoted, few empirical studies in the Indonesian context have specifically explored how animation-based learning can enhance young learners' understanding of the relationship between pronunciation and spelling—an area that continues to pose challenges due to the inconsistency of English orthography. Therefore, this research offers novelty by introducing and evaluating the use of animation media as a pedagogical innovation to improve English spelling mastery among young learners.

In response to the problem, this research was conducted with the aim of finding out the extent to which animation-based learning methods can improve spelling skills in early age students. The focus of this research is to evaluate the positive impact of using animation as a tool for teaching English spelling, as well as understanding how this approach can influence student learning motivation, student understanding, and student engagement. Apart from that, this research also aims to assess the effectiveness of animation in conveying spelling concepts which are often difficult to understand, especially for students who are still in the early stages of learning English.

Through this research, it is hoped that evidence will be obtained to support that the use of animation in the learning process can increase students' motivation, understanding and involvement in learning English spelling. Thus, it is hoped that this method can be adopted more widely by educators as an alternative media to increase students' motivation in learning

English. By utilizing increasingly sophisticated animation technology, students can learn spelling in a more fun, interactive and effective way, which will ultimately help them overcome challenges in overall English learning.

However, this research is also based on significant evidence in related literature. Although many previous studies have examined the use of animation in English language learning, most of the focus has been on increasing vocabulary. The positive results achieved in the context of vocabulary learning show the great potential of animation as a learning aid. However, there is still very little research exploring the use of animation to improve spelling skills, especially in young students who are still in the early stages of mastering English.

This hole is the main basis for this research. By exploring the impact of animation in spelling learning, this research aims to bridge this gap. The research question aimed to be answered in this study is: does the use of animation-based learning methods affect the English spelling ability of young learners?

REVIEW OF LITERATURE

Animation video-based learning has gained significant attention in recent times for its ability to enhance student engagement, motivation, and overall educational outcomes. Several studies have examined the potential of animation as a teaching aid, particularly in English language instruction for young learners, who are interested in developing important skills like vocabulary and spelling. Young learners encounter significant difficulties in learning English due to the inconsistent spelling and pronunciation, as well as irregular spelling rules. This can be particularly challenging for these students. Visual and auditory stimulation are utilized in anime learning to bridge these gaps. Furthermore, technology has been proven to enhance the learning experience of digital natives through teaching. Moreover, Traditional learning barriers in education are being broken up by the use of animation.

Arimuliani Ahmad (2023) animated videos were created to enhance the cognitive processing and engagement of elementary school students, with a focus on multimedia integration. Likewise, Rohman (2024) employed animated content from platforms like YouTube and Vimeo, including ZEPETO and Canva. Experimental studies conducted by Febriyanti (2024) revealed the efficacy of Canva in vocabulary teaching. Animation videos were used by Munawir (2022) in secondary schools to help students retain vocabulary and motivate them; Lestari (2021) conducted a trial using animated videos. These studies, when taken together, demonstrate how animated videos can be utilized in various educational contexts. Video design has consistently emphasized the importance of engaging and engaging students.

Interactive animation videos were instrumental in the development of these studies. The content of the documents was checked by Ahmad through validation questionnaires, while Rohman conducted teacher interviews, expert validation, and collected student feedback. Febriyanti (2024) and Lestari (2021) utilized comparative experimental designs, utilizing pre- and post-tests to assess learning outcomes. A pre-experimental method was used by Munawir (2022) to acquire vocabulary through observation. These diverse approaches highlight the potential of animated videos across various age ranges and educational contexts. More reliable results were obtained through the integration of qualitative and quantitative methods. Through the use of different methods, researchers were able to investigate the effectiveness and practicality of animated videos in the classroom.

The outcomes consistently prove that animated videos have a beneficial impact on educational goals. According to Ahmad (2023), there is a significant relationship between cognitive load and engagement, while Rohman (2024) observed improvements in comprehension and pronunciation. Video-mediated learning was a crucial factor in

Febriyanti's (2024) success in building up his vocabulary. Vocabulary scores in secondary students were higher as per Munawir (2022), and Lestari (2021) observed a rise in enthusiasm and retention among junior high students. These results point to the importance of well-designed multimedia in promoting deeper learning. Moreover, they affirm the significance of aligning video material with instructional goals to achieve optimal results.

Effective animated videos were made possible through the use of technological tools like ZEPETO, Canva, and CapCut. To alleviate cognitive burden, Ahmad (2023) created short-lived interactive videos. During his time, Rohman (2024) focused on designing for students, and Febriyanti (24), Canva's content was captivating. The incorporation of auditory and visual elements in these studies led to enhanced cognitive processing and retention, consistent with multimedia learning theories. Educators can use these tools to produce visually appealing and contextually relevant content with minimal technical knowledge. The implementation of this technique has simplified the creation of dependable learning resources for diverse educational contexts.'

Although animated videos can be fun, they are also problematic. As Ahmad (2023) and Rohman (2024), they found problems with audio filtering which was not good, and too many complicated animations that distracted the students. Among them, there were two examples. According to Lestari (2021), a more comprehensive research approach is required, while Febriyanti (2024) condemned the practice of solely relying on quantitative measures and neglecting qualitative insights. The limitations outlined indicate that video designs must be adjusted to meet different educational needs. To overcome these challenges, educators and learners must continuously provide feedback and iterate the design processes. In the future, research will need to look for ways to make animated videos more accessible in schools that have limited resources.

Future studies will concentrate on how animated videos influence memory over time, and if their effects are consistent in various settings. Ahmad (2023) suggested examining behavioral outcomes, whereas Rohman (2024) intended to explore their efficacy among various age categories. The capture of complex learning outcomes through qualitative feedback, such as interviews, was a crucial approach advocated by Febriyanti (2024) and Lestari (2021). Further investigation in these directions could extend the reach of animated videos to educational contexts. In addition, longitudinal research may uncover how animated videos affect students' learning pathways over time. Identifying the adaptability of this method across different educational institutions is another significant area of research.

The study suggests that animated video media can be a powerful tool for English language learners. Through engaging multimedia content, they enhance their engagement and comprehension skills while also improving vocabulary skills. The potential advantages are outweighed by the technical obstacles and limited research scope that may be present. Additional studies are necessary to enhance animated video designs and make them more comprehensible in different educational settings. With the advancement of technology, animated videos are expected to become more interactive and suitable for individual learning. The increased accessibility of these resources makes them an essential part of contemporary education.

METHOD

This research used a quantitative approach with the pre-experimental design, specifically the One-Group Pretest-Posttest Design. Experimental design is a type of study that seeks to determine the effect of a treatment or intervention on specific outcomes. Ary et al. (2009) explains that in experimental research, researchers intentionally create certain conditions or events to observe and analyze their consequences. In other words, experimental design aims

to explore cause-and-effect relationships between two variables or factors (Effendi, 2013). Another perspective defines experimental design as a study conducted on variables for which data does not yet exist. Therefore, researchers manipulate the variables by introducing specific treatments to the research subjects and subsequently measure or observe the resulting impacts (Jaedun, 2011).

Respondents

The study involved fifteen elementary students at grade four as respondents. On the first stage, the pre-test, the respondents were measured for their initial vocabulary and spelling skills through five randomly selected flashcards in the pre-test session, based on the material previously taught. On the second stage, the treatment, the respondents were then given vocabulary learning using an animated video with the theme of items in the living room and bedroom, with new material entitled “Where is My Pencil?”. On the last stage, the post-test, a post-test was conducted with the same procedure, where the respondents chose five flashcards randomly to measure their vocabulary and spelling improvement after the treatment.

Instruments

data in this study were collected through an oral spelling test. In the test ten flashcards correspond to the images in the animated video of about three minutes duration. In the pre-test and post-test, students randomly selected five flashcards to identify and spell the flashcard. These questions were designed to measure students' ability to understand vocabulary based on the theme of the video.

Procedures

In this design, there was only one in-take group that undergoes three stages: pre-test, treatment, and post-test. The illustration of the design is presented in Table 1 one group Pre-test Post-test design (Ary et al., 2009)

Table 1
One Group Pretest Posttest Design

Pretest	Independent	Posttest
Y1	X	Y2

The pre-test stage (Y1) aimed to measure students' initial ability in vocabulary and spelling. Then the treatment (X) was given in the form of animated video-based learning. The last stage is the post-test (Y2), which is used to measure the learning outcomes after the treatment. This method allows researchers to compare students' abilities before and after treatment.

Data analysis

The data collected were analyzed to answer the research question. Before the main data analysis, an assumption test of normality was carried out to ensure that the data was normally distributed. The result of the normality test is presented in Table 1.

Table 2
Tests of Normality

	Kolmogorov-Smirnova			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	df	Sig.
Pretest	.179	15	.200*	.903	15	.106
Posttest	.262	15	.007	.789	15	.003

Based on Table 2 Tests of Normality, the results of the normality test are shown in the Shapiro-Wilk column because the amount of data is less than fifty. The results show that the pretest data has a significance value of .106, which is greater than .05. This indicates that the pretest data is normally distributed. In contrast, the posttest data has a significance value of .003, which is smaller than .05. So, the posttest data is not normally distributed. Therefore, the data analysis used was the nonparametric Wilcoxon Signed Rank Test.

FINDINGS AND DISCUSSION

The study aimed to investigate the effect of animation-based learning on young learners' English spelling ability. A nonparametric Wilcoxon Signed Rank Test is used in the data analysis to answer the research question. The result of the data analysis is presented in Table 3.

Table 3
Ranks

		N	Mean Rank	Sum of Ranks
Posttest-Pretest	Negative Ranks	0 ^a	.00	.00
	Positive Ranks	11 ^b	6.00	66.00
	Ties	4 ^c		
	Total	15		

a. Posttest < Pretest
b. Posttest > Pretest
c. Posttest = Pretest

Based on the results of the Wilcoxon Signed Rank Test, Table 3 shows that there is no data of Negative Rank where the posttest score was lower than the pretest (N = 0). The number indicates that there were no students who experienced a decrease in their spelling ability. Further, the positive ranks present a number of N = 11 with the Mean Rank of 6.00 and Sum of Rank of 66.00. It means that eleven students showed an increase in scores on the posttest compared to the pretest, with a Mean Rank of 6 and a total rank of 66. In addition, there are four ties data that shows four students whose scores remained the same between posttest and pretest.

The results reflect that most students' spelling ability increase after being given treatment using animated videos. This data also shows the consistency of the increase as none of the students experienced a decrease in results. Thus, the results provide an initial indication of the effectiveness of the intervention provided.

Table 4
Test Statistics^a

	Posttest-Pretest
Z	-3,025 ^b
Asymp. Sig. (2-tailed)	,002

a. Wilcoxon Signed Ranks Test
b. Based on negative ranks.

The results of the analysis in Table 4, the Test Statistics, show that the Z value is -3.025 with a significance value (Asymp. Sig. (2-tailed)) of .002. Because this significance value is less than 0.05, the Null Hypothesis (H_0) is rejected, and the Alternative Hypothesis (H_a) is accepted. Thus, it can be concluded there is a significant difference on young learners' English spelling ability between before and after being taught using animation-based learning.

These results indicate that the animation-based learning method significantly affects the English spelling abilities of early childhood students. In other words, this learning approach

has proven to be effective in improving students' spelling abilities, so it can be considered a relevant and useful method to be applied in teaching young learners.

The finding is in line with the theory that visual media, such as animated videos, can increase students' interest in learning and understanding of the material. In other words, the results of this study provide empirical evidence that the use of innovative learning media can be an effective strategy in improving students' learning ability, especially in the vocabulary aspect.

The use of animation-based learning has been proven to significantly improve students' English spelling abilities, particularly among young learners. This research aimed to examine the impact of animated videos on students' spelling skills and showed that such media have a measurable positive effect on learning outcomes. This result aligns with the work of Ahmad (2023), who demonstrated that animated videos could enhance cognitive processing and engagement, especially for elementary students. Ahmad's study highlighted that multimedia elements in animation videos make the learning process more engaging, thus improving students' attention and retention. Similarly, Rohman (2024) found that using platforms like ZEPETO and Canva for animation content resulted in improved comprehension and pronunciation, which are foundational elements for spelling. The present study's results, where eleven students showed improved post-test scores, validate the positive impact of animated videos on vocabulary and spelling mastery. These findings suggest that incorporating animation in teaching can help bridge gaps in traditional learning methods by offering a more interactive and visual learning experience.

Furthermore, the lack of negative ranks in the data, where no student experienced a decrease in results, supports the findings from Lestari (2021), who observed that animated videos improved student engagement and retention in vocabulary learning. Lestari's research showed that multimedia-based tools like animation videos fostered more active participation and enhanced memory retention, which is consistent with the present study's results where none of the students' post-test scores decreased. This contrasts with traditional methods, where students sometimes show stagnation or minimal improvement due to less interactive content. The present study underscores the potential of animated videos to provide consistent improvements in students' learning outcomes, particularly for spelling, as students demonstrated notable gains without regression. This result echoes the importance of interactive and engaging tools in modern education.

In terms of methodology, this study employed the Wilcoxon Signed Rank Test, which proved effective in identifying significant differences in pre- and post-test scores. This approach mirrors the design used by Febriyanti (2024), who also used pre- and post-test measurements to assess the effectiveness of animated videos in vocabulary learning. Febriyanti's study found that students who were exposed to animated videos showed significant improvement in vocabulary acquisition, aligning with the current study's findings on spelling improvement. The successful application of a similar statistical method across studies enhances the credibility of the results, demonstrating that animated video-based learning can be a reliable and replicable method for improving language skills. By using nonparametric tests, the present study overcame the normality issues in the post-test data, ensuring that the results were both robust and valid.

Additionally, the significant improvement in spelling ability as a result of the animation-based intervention can be compared to the work of Munawir (2022), who demonstrated that animated videos enhance vocabulary retention and motivation in secondary school students. Munawir's study showed that students were more motivated to engage with learning materials presented in an animated format, which is consistent with the motivation increase observed in the present study. This connection between animation and enhanced motivation is important for understanding why students showed such consistent improvements in

spelling. Animated videos not only increase student interest but also make the learning process more enjoyable, which is critical for sustaining long-term educational gains. As such, integrating animation into the curriculum can be an effective strategy to foster enthusiasm for language learning.

Thus, the results of this study strengthen the growing evidence supporting the effectiveness of animated video-based learning in improving language skills. The positive impact of animated videos on spelling skills is in line with the findings of several studies, including Ahmad (2023), Rohman (2024), Febriyanti (2024), Lestari (2021), and Munawir (2022). Collectively, these studies show that multimedia learning tools, especially animation, can improve English language skills.

CONCLUSION

Animation-based learning is an effective strategy in teaching English spelling, offering a fun, interactive and effective way to address spelling English in language learning for young students. The study, conducted using a pretest-posttest design with fourth grade students as the respondents, showed that after the implementation of animated video-based instruction, the majority of students showed significant increase in their spelling scores. Out of fifteen students involved in the study, eleven showed improved post-test scores compared to their initial tests. The average posttest scores were consistently higher, with some students achieving perfect scores. The data analysis using the Wilcoxon Signed Ranks Test confirmed the rejection of the null hypothesis, indicating that there is a significant difference in young learners' English spelling ability before and after being taught using animation-based learning. No students experienced a decrease in scores, further strengthening the findings that animation-based learning effectively enhances English proficiency. However, challenges such as technical glitches should be considered to increase the effectiveness of this approach.

Overall, it can be concluded that animation-based learning has a statistically significant effect in increasing students' English spelling ability. Its wider application in education is recommended, with careful attention to content design and implementation to optimize learning outcomes.

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