

Enhancing Pre-School Students' Vocabulary Skills Through Digital Storytelling: A Classroom Action Research

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Abstract

This classroom action research aimed to enhance preschool students' vocabulary skills through the use of digital storytelling and to observe their engagement during the learning process. The study was conducted in two cycles, each consisted of two sessions with fourteen students aged five up to six years from a preschool class in Batam. Data was collected through pre and post-tests and classroom observations. Analysis involved comparing the mean test scores to assess vocabulary growth and using qualitative data from observations to evaluate the effectiveness of the digital storytelling actions within each cycle. The results demonstrated a significant improvement in students' vocabulary mastery, evidenced by the average performance in the pre-test shifting to a very good category in the post-test. Furthermore, classroom observations confirmed higher levels of attention, enthusiasm, and interaction during the learning sessions. The findings confirm that digital storytelling is an effective and engaging method for vocabulary instruction in early childhood education. It supports vocabulary retention and student motivation even when applied with simple technology. This study recommends the integration of digital storytelling in early language learning and encourages future research to explore its long-term impact and application across various language skills.

Keywords: *Classroom action research; Digital storytelling; Early childhood learning; Vocabulary development*

INTRODUCTION

Vocabulary plays an important role in the early stages of language acquisition (Agazzi, 2022). Vocabulary is the foundation for mastering the 4 English skills: listening, speaking, reading and writing. For young learners, English vocabulary is central to their foreign language learning. Vocabulary mastery will enable them to express their thoughts clearly and understand spoken language (Gusti et al., 2023). Furthermore, it also builds the foundation for their future language development. In teaching English to young learners, it is important to use interesting and age-appropriate teaching methods, so that they can resonate with their characteristics (Avezova, 2022; Qizi, 2024). This is important since young learners are more active and enthusiastic in the learning process. Therefore, implementing effective strategies becomes essential in enriching preschoolers' vocabulary since it impacts the learning process (Marsevani et al., 2024).

One widely recognized approach to promoting language learning in young children is storytelling. Storytelling provides a natural and engaging way for preschool students to acquire new vocabulary in context, making learning more meaningful and memorable

(Khamsuk & Whanchit, 2021). Traditional storytelling, which involves reading aloud or narrating stories, helps children develop listening skills, comprehension, and word recognition (Handayani et al., 2024; Mujahidah et al., 2021). Nurhidayati and Yasmin (2024) adds that storytelling fosters imagination and social interaction which contribute to a child's linguistic and cognitive growth. However, while traditional storytelling methods have proven effective, there is a growing need to integrate more interactive and visually appealing approaches that align with the digital age (Hao et al., 2025)

The increasing integration of digital storytelling in education has opened new possibilities for enhancing vocabulary instruction in preschool settings. Digital storytelling combines text, images, audio, and animation to create an immersive storytelling experience (Harahap et al., 2024). Unlike conventional storytelling, Digital storytelling provides a multimodal learning environment that caters to different learning styles, making it more effective in capturing young learners' attention and improving their vocabulary retention (Choo et al., 2020). As technology becomes more accessible in early childhood education, educators are exploring Digital storytelling as an innovative tool to make language learning more interactive and engaging for preschool students.

However, several problems were identified from observation in the English class of Group B students in one of the private pre-schools in Batam. First, students' vocabulary to communicate in English is still limited, many students have difficulty in remembering and using new vocabulary in English. Second, some students have unclear pronunciation which makes their words difficult to understand. These problems were also found in Pratiwi et al. (2022) research, they found that young learners had difficulty in English pronunciation. Besides, children have short attention span, they tend to be easily distracted and cannot focus for a long time. Pebriantini et al. (2024) research also found that young learners tend to have short attention spans and are very energetic, some of them chatting with their friends and wandering around the classroom when lack focus. She also found that children tend to use their native language due to their lack of English vocabulary. To overcome these problems, interactive and engaging English learning is needed. Therefore, implementing Digital Storytelling could be a solution to solve these problems.

Several previous studies have investigated the implementation of Storytelling in English as a Foreign Language (EFL) context (Alderbashi, 2021; Elkhimry, 2022; Kurniawan, 2021; Maya & Halim, 2021; Nair & Yunus, 2021; Otoluwa et al., 2022; Purnama et al., 2022; Sembiring & Simajuntak, 2023). Otoluwa et al. (2022), Sembiring and Simajuntak (2023) and Maya and Halim (2021) showed that Storytelling significantly increased children's vocabulary knowledge, as evidenced from the results of the post-test score that increased significantly. In addition, studies on the motivational and engagement benefits of Storytelling also show positive results, emphasizing that Digital Storytelling attracts children's attention, making learning more fun and interactive (Alderbashi, 2021; Elkhimry, 2022; Kurniawan, 2021; Purnama et al., 2022). Similarly, Nair & Yunus (2021) also found that Digital Storytelling improved overall language skills.

While there have been many studies on storytelling in various contexts and levels, a significant gap remains regarding its specific application to local needs. Crucially, no research has explored the impact of Storytelling on enhancing vocabulary for speaking skills development among pre-school students in Batam. In addition, existing studies on the impact of Digital Storytelling focuses on pre-school students' vocabulary gains and

motivation are still limited. Therefore, this research aims to examine the effectiveness of Digital Storytelling in improving students' vocabulary learning and engagement when implemented in a pre-school English class in Batam. This research contributes novel, context-specific evidence on how classroom action research can be used to address pedagogical challenge using digital storytelling.

METHOD

This study employed a Classroom Action Research (CAR). CAR was chosen as it fosters classroom transformation by improving teaching-learning practices through self-reflection, analysis, methodical planning, and execution (Pandey, 2023). This research followed Kemmis and McTaggart's (1988) action research, each cycle consisted of four stages: planning, action, observation, and reflection. In the planning stage, the researchers identified students' difficulties and designed the method to solve the problem. Next, the action phase was carried out which were two implementation sessions. During implementation, classroom observations were also conducted. At the end of the cycle, researchers analyzed the test and observation results. The study was conducted in two cycles to assess the effectiveness of digital storytelling in vocabulary development and refine teaching strategies based on students' responses and learning progress. It was conducted at a private pre-school located in Batam. The researchers chose this site because researchers currently completing a teaching assistant internship at the school. The participants of the study were 14 students from Group B2, consisting of 7 girls and 7 boys aged 5 to 6 years old.

The primary source of data in this research was the pre-test and post-test, which were used to measure students' vocabulary improvement after implementing digital storytelling. The pre-test was conducted before the treatment to assess students' initial vocabulary knowledge, while the post-test was administered after the treatment to evaluate their progress. Both tests consisted of picture-based vocabulary questions, where students were asked to identify and name objects correctly. By comparing the pre-test and post-test scores, the study aimed to determine the effectiveness of digital storytelling in enhancing preschool students' vocabulary skills. In addition to the test results, observation was used as a supporting data source to assess students' engagement during the learning process. Throughout the digital storytelling sessions, a fieldnote was utilized to record students' attentiveness, participation, enthusiasm, and interaction with the storytelling materials. This qualitative data provided valuable insights into how students responded to the digital storytelling approach, complementing the quantitative findings from the pre-test and post-test.

The first step of data collection was conducting a pre-test. This test aimed to assess students' initial vocabulary knowledge and served as a basis for comparison. Students were given a test in the form of picture-based vocabulary questions, where students are asked to identify and name objects. After the pre-test, the treatment was carried out, namely the digital storytelling strategy was implemented in the class for 2 meetings each cycle. Digital stories enriched with visuals and audio were used as teaching materials. In each storytelling session, students were encouraged to listen actively, repeat new words, and participate in discussions about the content of the story. To complement the test results, observations were carried out during the treatment to assess the student engagement. Students' attention, enthusiasm, verbal responses, and interactions with storytelling material were observed. These observations provided qualitative insight into the effectiveness of digital storytelling in maintaining student interest and participation.

After completing the treatment, a post-test was given to evaluate students' vocabulary development. The post-test format was the same as the pre-test, allowing for direct comparison of results.

The data collected from the pre-test, post-test, and classroom observations were analyzed to determine the effectiveness of digital storytelling in enhancing preschool students' vocabulary skills. The analysis focused on measuring students' vocabulary improvement and their level of engagement during the learning process. The pre and post-test served as the primary data sources to measure students' vocabulary development. Microsoft Excel was used to organize and analyze the data. The researcher compared the scores from both tests to identify any improvement in students' vocabulary skills after the intervention. The analysis followed these steps, first, each student's test was scored based on the following rubric adapted from Magnussen & Sukying (2021) and Maghfiroh & Wahyuni (2023).

Table 1. Student's Rubric

Criteria	Excellent (3)	Good (2)	Needs Improvement (1)
Word pronunciation	Pronounces words clearly and correctly	Some mispronunciations but mostly understandable	Many mispronunciations, difficult to understand
Word recognition	Correctly identifies all or almost all words (80-100%)	Identifies some words correctly (50-79%)	Identifies few or no words correctly (0-49%)
Verbal response	Says the word correctly with confidence	Says the word but with hesitation or slight errors	Unable to say the word or does not respond

To accurately measure the students' productive vocabulary skills, a detailed scoring rubric was developed based on three key performance criteria: Word Pronunciation, Word Recognition, and Verbal Response. Each criterion was evaluated on a 1–3 scale, categorized into three proficiency levels: Excellent (3), Good (2), and Needs Improvement (1). Table 1 outlines this vocabulary scoring rubric, which was applied to both the pre-test and the post-test. The score result then was added and categorized into three levels: 1-3=Poor, 4-7= Average, 8-9= Very Good. The average target score set by researchers that must be achieved in the post test is a minimum of 8 out of 9. Next, the average (mean) score from the pre-test was compared with the average score from the post-test. The observation data was analyzed by summarizing data descriptively to identify patterns and trends in student engagement. This includes noting behaviours that indicate increased interest and motivation in learning vocabulary.

RESULTS AND DISCUSSION

Result

This research used three main instruments, namely pre and post-test, and classroom observation. The pre and post-test were used to measure the development of students' vocabulary skills before and after the implementation of the digital storytelling method. The test was designed in the form of picture-based questions which included 6 oral questions. Students were asked to name and identify vocabulary from the pictures. Scores were assessed using a productive vocabulary scoring rubric. In addition, classroom observation serves as a supporting instrument to assess students' engagement during the learning process with indicators such as attention, enthusiasm, participation, and interaction.

The pre-test was conducted before the implementation of digital storytelling-based learning. 14 students from Group B2 were asked to identify vocabulary presented through pictures and respond orally. Each student was tested individually to ensure more accurate assessment. The pre-test results showed that most students were only able to recognize 2–4 animal vocabulary words in English, and some were still hesitant in responding with several pronunciation errors. The average class score on the pre-test was 6.28 out of a total of 9 (69.8%). This indicates that the students' vocabulary mastery was still considered average before the intervention was applied.

After the pre-test stage, the researcher conducted two learning sessions using the Digital Storytelling approach. Each session lasted 30 minutes and used a thematically designed lesson plan with the topic of “animals.” The learning sessions began with an introduction to the material, followed by a digital story video watching activity using the researcher's laptop device. The students appeared excited because it was their first time participating in a lesson using technology other than a mobile phone. The students watched a different story in each session, but all were still within the animal theme. During the storytelling, the researcher asked the students to pronounce and repeat new vocabulary words that appeared and also engaged them in a question and answer session about the story they had watched.

During the implementation process, the class showed a significant increase in students' engagement from session to session. Most students paid attention while watching the digital stories, showed high enthusiasm when pronouncing new vocabulary, and responded more actively verbally. They began to participate in simple conversations and demonstrated positive social interactions, such as answering questions together and commenting on the content of the story. However, not all students were able to maintain their focus throughout the lesson. Some students were still easily distracted, such as by chatting with friends, daydreaming, or not paying attention, which required the researcher to frequently call on them and actively encourage their participation to maintain overall engagement.

The post-test was conducted after the learning sessions were completed. The question format and scoring rubric were the same as the pre-test to maintain consistency. The vocabulary tested in the post-test was about animals as what they have learned in the treatment sessions. The post-test results showed improvement in vocabulary acquisition as shown in the following table.

Table 2. Students' Improvement Cycle 1

Cycle 1	Score	Category
Pre-test	6,28	Average
Post-test	7,5	Average

It was found that while students showed increased attention and enthusiasm, some still had difficulties in pronouncing certain words and maintaining focus throughout the sessions. Based on this reflection, improvements were planned for Cycle 2, modifications were made to enhance participation and pronunciation accuracy. The topic for Cycle 2 focused on "Fruit Vocabulary." The researchers prepared shorter and more engaging digital stories and included repetition drills and question-answer segments after storytelling. Cycle 2 was conducted in two sessions similar to Cycle 1. Students watched different fruit-themed digital stories. They practiced vocabulary repetition and pronunciation drills. The researchers again recorded observations on students' responses, motivation, pronunciation accuracy, and overall participation. Compared to Cycle 1, students showed higher levels of attention, more confident pronunciation, and active verbal engagement. After Cycle 2, post-test results and observational data indicated that students' vocabulary mastery had improved significantly.

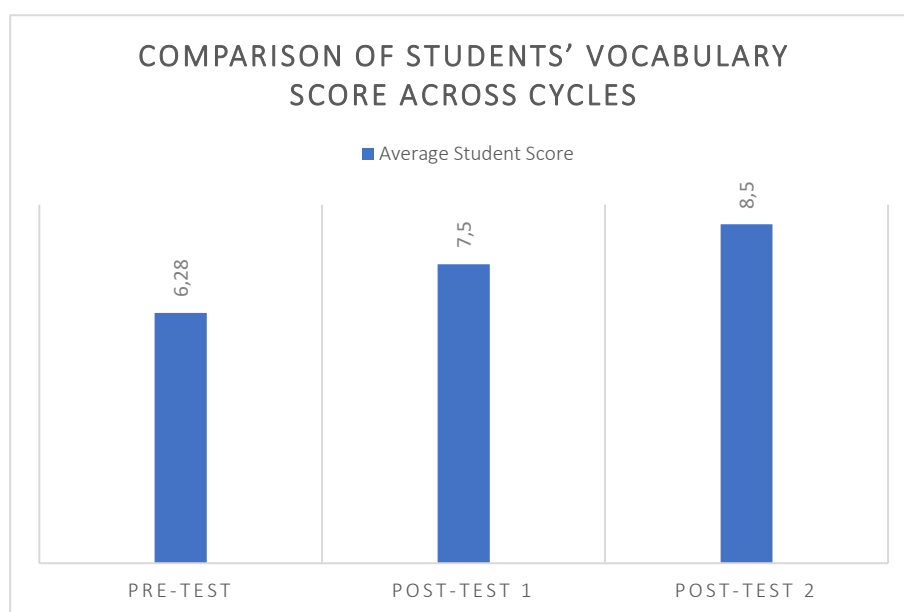


Chart 1. Comparison of Students' Vocabulary Score across cycles

The chart clearly shows a continuous improvement from the pre-test to the second post-test. The increase from 6.28 to 7.5 after Cycle 1 indicates that digital storytelling began to enhance students' vocabulary retention and usage. The further rise to 8.5 after Cycle 2 suggests that sustained implementation and refinement of the storytelling activities led to greater mastery and engagement. The improvement in scores indicates that the use of digital storytelling successfully improved students' vocabulary skills. Moreover, vocabulary learning became more meaningful and easier for students to remember due to the use of digital storytelling, as evidenced by their ability to retell the stories they had watched. Observations during the post-test also showed that students were more confident when answering, their pronunciation was clearer, and almost all

students were able to respond spontaneously. They appeared enthusiastic and were not hesitant to speak, demonstrating that learning through digital storytelling not only enhanced their vocabulary mastery but also built their motivation and confidence in using English.

The implementation of digital storytelling in this classroom action research has shown a significant positive impact on preschool students' vocabulary development and engagement. Through structured lesson plans and digital storytelling activities, students demonstrated clear improvements both in their test scores and classroom participation. Observations revealed increased enthusiasm, attention, and verbal responses throughout the learning process. While there were minor challenges, such as managing attention spans and dealing with technical limitations, the overall results support digital storytelling as an effective and engaging strategy for teaching vocabulary in early childhood settings.

Discussion

The results of the pre-test showed that students' vocabulary skills were in the average category. This finding aligns with Nainggolan et al. (2023) which states that preschool children's vocabulary mastery is generally limited to common words used in everyday communication. Moreover, young children have limited memory capacity, making it easy for them to forget newly introduced vocabulary (Vlach, 2019). In addition, conventional vocabulary instruction tends to be explicit and lacks meaningful context, which often leads to boredom and low motivation among students (Alhama et al., 2023).

The pre-test also revealed that while some students performed well, scoring in the high category, four students were still categorized as low performing. This indicates a noticeable gap in English language proficiency among the children. One possible factor contributing to this disparity is the variation in students' backgrounds and prior exposure to the English language (Leona et al., 2021). Students who have had more frequent exposure whether through family, media, or early educational experiences tend to demonstrate better vocabulary mastery (Uchihara et al., 2022). This aligns with Cai (2024) theory, which emphasizes the importance of comprehensible input and frequent exposure in language learning. Children who are regularly exposed to the target language are more likely to internalize vocabulary and language patterns naturally. Therefore, differences in exposure and home language environment may significantly influence children's initial vocabulary skills in an EFL (English as a Foreign Language) context.

During the treatment sessions, digital storytelling was introduced into the learning process. The results showed a noticeable increase in students' enthusiasm and verbal participation throughout the lessons. This finding supports the theories of Handayani et al. (2024), Maya and Halim (2021), Sulistianingsih and Aflahatun (2021), who stated that storytelling not only helps build vocabulary but also enhances students' motivation to learn through direct interaction. The use of multimedia in digital storytelling proved effective in maintaining students' focus. This is further supported by Setyawati (2024) who found that digital storytelling offers a multisensory learning experience that keeps children more engaged. Alipar et al. (2024) also reported that well designed digital storytelling can improve children's attention and help them better understand the story content. However, not all students were able to maintain their focus throughout the lessons, this short attention span is in line with Pebriantini et al. (2024) findings, which highlight the need to adapt the duration of digital content for young learners.

The increase in the average post-test score to 8.5 out of 9 (94.4%) supports Ginting et al. (2024) findings which state that the multimodal nature of Digital Storytelling which combines images, sound, and text, enhances long-term memory retention. This finding is also consistent with the study by Aulia et al. (2019), which found that storytelling improves oral communication skills through the repetition of vocabulary within a narrative context. The post-test results showed that most students experienced a significant improvement in their English vocabulary mastery. The children were able to recall and use the newly learned vocabulary in contextual situations, reinforce the results of Sembiring and Simajuntak (2023) who concluded that children who learn vocabulary through digital storytelling demonstrate better retention compared to those taught using traditional storybooks. Additionally, students' learning motivation increased, which aligns with the findings of Roy (2024) and Kurniawan (2021) who emphasized that digital storytelling could enhance young learners' enthusiasm and interest in language learning.

Despite the positive improvements demonstrated in the results, several challenges were encountered during the implementation process, particularly related to limited technological resources. The absence of essential equipment such as projectors, external speakers, and display screens required the researcher to rely solely on a personal device. However, the device's small screen size hindered the overall viewing experience for students, limiting the immersive potential of the digital storytelling sessions. As a result, some students were unable to maintain their focus consistently, especially those seated farther from the device. This limitation highlights how technological constraints can directly affect student engagement and the overall effectiveness of digital learning interventions. These issues reflect concerns raised from Cao (2024) and Panchenko (2021) who emphasized that the effectiveness of digital storytelling in early education is often constrained by unequal access to technology and teachers limited technical skills, both of which were encountered in this study.

For teachers, this means incorporating digital storytelling makes vocabulary learning more enjoyable and effective. However, teachers should be aware of possible challenges like limited resources or technical skills and plan their lessons accordingly to maximize the benefits of this approach. Therefore, teacher support and the use of simple accessible tools were key factors in the successful implementation of this method.

CONCLUSION

The implementation of digital storytelling proved effective in improving preschool students' vocabulary skills and engagement. Initially, students showed average vocabulary mastery and hesitation in using English. After the intervention, they demonstrated greater confidence, clearer pronunciation, and more active verbal responses. Digital storytelling also created a more engaging and enjoyable learning environment. These findings suggest that teachers can use digital storytelling to support vocabulary retention and motivation, even in low resource settings. Despite limitations in technology and time, this method remains practical and impactful. Future research is encouraged to explore its long-term effects and broader application across different language skills and age groups.

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