



The effect of Plotagon story application on the speaking ability of 11th-grade students at SMAN 13 Padang

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Abstract:

This research was driven by the need to find engaging digital tools that can motivate students to improve their speaking ability. It is shown that many students often face difficulties in expressing their ideas orally. This research used a pre-experimental with pre-test and post-test design to evaluate the effect of the Plotagon Story Application to improve students' speaking ability at SMAN 13 Padang. The research sample was 11th-grade students, with 24 students, selected using a convenience sampling technique. Treatment was conducted over 8 meetings, with pre-test data collected in the first meeting and post-test data collected in the last meeting. The results of the research increase in the average score from 71 on the pre-test to 85 on the post-test. Furthermore, the paired sample t-test analysis indicated that the two-tailed p-value (sig. 2-tailed) was 0.000, which is well below the threshold of 0.05. This result supports the acceptance of the alternative hypothesis (H_a) and the rejection of the null hypothesis (H_0), confirming a significant effect of the Plotagon Story Application on improving speaking ability. Further research is suggested to expand the scope of the sample at different levels of education or settings with diverse technological facilities, exploring the influence of the Plotagon Story application, and to test the consistency of the effectiveness of the Plotagon Story application.

Keywords:

Plotagon Story, English Speaking Ability, EFL learners, Senior High School

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1. INTRODUCTION AND LITERATURE REVIEW

Speaking ability is one of the abilities that greatly affects our daily lives, both in educational and non-formal environments. Within educational frameworks, mastering English speaking skills is paramount, as it grants learners the communicative competence needed to express themselves effectively. However, in Indonesia, achieving this proficiency remains highly challenging because English is not used as a daily language for communication. Hiver et al. (2022) say that speaking is the most complex skill for students, based on the aspects of

language such as verbal, nonverbal, and functional, as described. Students still need help with communicating in English at school. English-speaking students studied in school, but did not practice intensively. According to McCarthy and Clancy (2019), dynamic learning should involve practice development in an educational institution, not only theoretically. Several things make English speaking a trouble for students. According to Aristy et al. (2019), learning English orally is difficult because English is not the students' main language, and it is not used for their daily communication. In senior high school, students are required to have good English-speaking skills in the English subjects. As Richards (2006) states, the goal of teaching speaking is to provide learners with communicative competence and classroom activities that develop learners' ability to express themselves through speech. English speaking is often used from an academic perspective, but it can also be used for applying for jobs, especially in this era. English speaking skills also help us to speak fluently to foreigners, negotiate, and have self-confidence.

Unfortunately, this skill is still harder to achieve than other skills because Indonesian academics are not focusing on it. According to Coban et al. (2021), English speaking has become one of the most needed skills for communication in our daily activities. In Indonesia, the challenges faced by students are influenced by the English teaching program in schools based on the high school curriculum, which is not well implemented. Teaching students consistently about speaking is still not done, coupled with a classroom environment that is not supportive, unsupportive friends, making students lack confidence, and the use of speaking media is limited to students because they only use dialogue as a speaking medium (Thohir, 2021). The curriculum demands on students to improve their speaking skills are not proportional to the available materials and supporting media.

This raises problems faced by students due to internal and external problems. Internal problems consist of a lack of confidence and a lack of environmental support. Meanwhile, external problems such as limited learning of speaking media or technology in schools, inconsistent application of English, and lack of interaction between students related to the discussion of speaking skills. However, despite the range of technology tools available for language learning, selecting the right ones and using them effectively in the right context remains a challenge. Various practices can maximize the benefits of technology tools in language learning environments. According to Mamadaliyeva and To'rayeva (2024), language teachers incorporate these approaches into their curricula, offering best practices and activities for different language areas such as listening, reading, writing, speaking, and vocabulary learning. These practices explain how technology tools are used to enhance language learning (Afidah et al., 2021). Kayi (2006) states that understanding the underlying language learning strategies may also help language model designers to identify language learning tasks or activities that maximize the efficiency and effectiveness of language learning with technology use.

To combat this issue, the integration of innovative digital media is highly needed to transform passive environments into dynamic, interactive spaces. Among various technology tools, the Plotagon Story application emerges as an engaging 3D animation tool that psychologically lowers students' learning barriers by establishing a fun atmosphere. Presenting

strategies or models for effective technology-enhanced language learning should not only help teachers but also guide students or language learners at an introductory level to adopt the right path, in the sense of how to make appropriate use of technology tools based on the guidelines or pedagogical approaches proposed in the domain. Plotagon Story is one of the animation media that can be used for learning media, which allows you to make short animated films according to the needs of users of this application. The use of the Plotagon Story application is also very easy to understand, even for beginners. Students can edit, modify, and make a short-animated movie with the provided characters in the application (Guzman Gamez & Moreno Cuellar, 2019). The advantage of using Plotagon Story in the learning process is that video creators can create conversational themes. Sari and Widiyanto (2023) state that Plotagon Story can also add voice features in the video-making process, which can be a good medium for a student's speaking ability. The Plotagon story application can be used as a learning medium to improve students' abilities, including speaking. Hockly and Dudeney (2014) state that it is essential to incorporate an effective strategy for students into the overall learning process in the classroom, but the common strategy often makes students feel bored during learning. Therefore, the Plotagon story application is one of the media that can increase students' interest in learning speaking skills because of the diversity of features that can be adjusted, and hopefully can support the ability of 11th-grade students of SMAN 13 Padang, especially in speaking ability.

Previous studies have confirmed the benefits of Plotagon in language learning. For instance, Mudinillah et al. (2022) agreed that speaking skills could be improved by using Plotagon. This article found some advantages of this application, such as the fact that it can be used on laptops, PCs, and smartphones. Plotagon also provides easy experiences for creating your characters. The disadvantages of this application are that there are no Indonesian voices available, the character's movements are limited, and this application can sometimes have errors, while Iman (2024) discovered that Plotagon significantly improved students' pronunciation scores. Additionally, Baihaqi et al. (2023) established its effectiveness in elevating both listening and speaking performance. Despite these findings, a noticeable gap remains: most prior research primarily highlights the technical advantages or general utility of the application across broad language skills, but there is limited empirical focus on evaluating its specific experimental impact on senior high school students' interactive speaking sub-skills—namely fluency, pronunciation, vocabulary, grammar, and comprehension—within a controlled pre-experimental framework in regional areas like Padang.

Therefore, the researcher chose to conduct the title “The Effectiveness of Plotagon Story on Students’ Speaking Ability”. The study focused on identifying the effectiveness of using the Plotagon story application in improving students’ speaking ability in English for the 11th grade of SMAN 13 PADANG. The skills assessed are fluency, pronunciation, vocabulary, grammar, and comprehension. Therefore, this study aims to bridge this gap by explicitly investigating the significant effect of the Plotagon Story Application on the speaking ability of 11th-grade students at SMAN 13 Padang. This research was conducted over 6 meetings, and the research design used is a pre-experimental group design, meaning there is no control class in this research.

2. METHOD

This research utilized a pre-experimental design, specifically a one-group pre-test and post-test design. In this design, there was no control class, meaning the researcher focused solely on one group to observe the changes before and after the intervention. The population for this study was the 11th-grade students of SMAN 13 Padang in the 2025 academic year. Through convenience sampling, class F10 was selected as the research sample. According to Arikunto (2013), the pre-test and post-test will be given to the experimental group, and the design will be diagrammed as follows:

Table 1. Pre-experimental group design

pretest	treatment	posttest
O ₁	X	O ₂

O₁: Pre-test for experimental class

O₂: Post-test for experimental class

X: Treatment using a Plotagon story application

The population of this research consisted of all eleventh-grade students at SMAN 13 Padang, located in Tanjung Aur, Koto Tengah subdistrict, Padang City. To select the sample, a convenience sampling technique was implemented, which involves choosing the most accessible respondents as research subjects. Sekaran and Bougie (2013) stated that convenience sampling selects the most accessible respondents, who are then selected as subjects. This specific non-probability sampling technique was deployed due to strict class availability, pedagogical time constraints, and specific school administrative permissions. Consequently, class F10, consisting of 24 students, was selected as the operational sample. The choice of class F10 was strictly determined by the decision of the school's hosting English teacher based on schedule alignment, meaning the researcher could not freely select or randomize the 11th-grade classes.

The primary data collection instruments were the pre-test (O₁) and the post-test (O₂). Pre-test is one of the evaluation methods carried out by a researcher to determine the extent of students' understanding of the learning material provided. As the name suggests, Pre-test means an evaluation or test carried out before starting learning. According to Sudijono (2003), the aim is to measure how much students know about the learning material. A post-test is a test given after treatment at the end of the study. According to Sudijono (2003), the post-test is a test carried out to find out whether all important materials can be mastered by students as much as possible. This study utilized a pre-experimental design conducted over a synchronized period of 8 meetings to fully capture the effect of the independent variable. The speaking task assigned throughout the phases was an oral speaking test in the form of describing a picture (with topics surrounding animals, natural phenomena, and plants), with a required speaking duration of 2 to 3 minutes per student. The focus was on task-based activities where students created short animated stories or dialogues, concentrating on clear speech, pronunciation, and developing

their ideas (Fasha, 2024). The systematic breakdown of the treatment steps across the 8 meetings is detailed as follows:

1. **Meeting 1: Pre-Test Phase.** The researcher administered the initial speaking test. Students were given a set of descriptive pictures and required to speak for 2–3 minutes to record their baseline speaking performance before any digital intervention. **Meetings 2 to 3: Introduction & Scripting.** The researcher introduced the Plotagon Story Application, its technical interface, and features to the students. Students were guided to move from teacher-centered learning to an active setup, where they began developing a descriptive text script based on chosen topics.
2. **Meetings 4 to 5: Rehearsal & Recording.** Acting as digital directors, students applied their scripts to the application by choosing backgrounds, editing 3D characters, and configuring movements. They intensively practiced and recorded their own voices via the voice feature to animate their avatars, allowing them to experiment with language aspects without stage fright.
3. **Meetings 6 to 7: Revision & Presentation.** Students reviewed their generated 3D animated storytelling videos, corrected pronunciation or grammatical flaws under the researcher's facilitation, finalized video rendering, and shared their creative work with the class.
4. **Meeting 8: Post-Test Phase.** Students underwent the final speaking evaluation. They were assigned new pictures under identical topical themes and required to deliver a 2–3-minute description to assess their final speaking abilities.

The primary instrument used was an oral proficiency test measured using a structured speaking assessment rubric adapted from Brown (2004). The assessment specifically evaluated 5 core criteria: Comprehension, Fluency, Vocabulary, Pronunciation, and Grammar. Each criterion was graded on a score range from 1 (lowest) to 5 (highest), based on detailed behavioral indicators:

1. *Comprehension:* Evaluates the ability to understand content/conversation seamlessly down to the slowest tempos.
2. *Fluency:* Assesses the flow of speech, monitoring for hesitations, volume levels, or stammering.
3. *Vocabulary:* Measures the appropriate selection of words, phrases, and avoidance of constant repetition.
4. *Pronunciation:* Evaluates clarity of intonation and native-like accuracy versus patterns causing listener misunderstanding.
5. *Grammar:* Checks grammatical correctness, syntax order, and structural context clarity.

To determine inter-rater reliability, the test sessions were independently evaluated by 2 distinct raters: the researcher and the school's official English teacher. The final grade for each student was derived using the following mathematical formulation:

$$\text{total percentage score} = \left(\frac{\text{earned score}}{\text{maximum possible score}(25)} \right) \times 100\%$$

Each of the 5 criteria carried an equal weight of 20%, collectively summing up to a maximum achievable score of 100%.

The collected data from the pre-test and post-test were analyzed using quantitative statistics. First, a Normality Test (Shapiro-Wilk) was conducted to ensure the data were normally distributed. Ismail (2022) states that the Shapiro-Wilk method is an effective and valid normality test method used for a small number of samples. Next, the Paired Sample T-Test. Widiyanto (2013) states that the paired t-test is one of the testing methods used to assess the effectiveness

of the treatment, characterized by a difference in the average before and after the treatment. Paired samples come from the same subject, and each pre-test and post-test is taken under different circumstances. A paired sample t-test was performed to determine the statistical difference between the pre-test and post-test scores. The decision rule was that the alternative hypothesis (H_1) would be accepted (and the null hypothesis (H_0) rejected) if the two-tailed significance value (sig. 2-tailed) was less than the alpha level of 0.05

3. RESULTS AND DISCUSSION

3.1. Findings

The Finding 1: The result of the pre-test and post-test

Before administering the treatment, the researcher conducted a pre-test that was assessed by two raters, and the results of the two raters were averaged. Based on the pretest data below, the lowest average pretest score is 50, and the highest average pretest score is 88. And after the treatment, the researcher gave a post-test using the same test. Based on the post-test data below, the lowest average pretest score is 68, the highest average post-test score is 100. Therefore, the result indicated a beneficial effect on students' speaking abilities. The results of the pre-test and post-test can be seen in the table as follows:

Table 2. The result of the pre-test

No	Description	score
1.	Number of students	24
2.	Minimal score	50
3.	Maximal score	88
4.	Mean score	71.166
5.	Standard Deviation	12.027

Table 3. The result of the post-test

No	Description	score
1.	Number of students	24
2.	Minimal score	62
3.	Maximal score	100
4.	Mean score	85.750
5.	Standard Deviation	10.831

Finding 2: Descriptive statistics

The pre-test and post-test data were presented in detail by the researcher using SPSS version 25. For easy interpretation, the data presentation provides a clear overview. The table provides detailed information about the pre-test and post-test as follows:

Table 4. Descriptive statistics

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Pre Test	24	50	88	71.166	12.027
Post Test	24	62	100	85.750	10.831
Valid N (listwise)	24				

Based on the data in the table above, the data shows the mean of the pre-test is 71.16, with a minimum score of 50 and a maximum score is 88. Meanwhile, the mean of the post-test is 85.75, with a minimum score of 62 and a maximum score of 100. Therefore, the data revealed that the mean scores of the pre-test and post-test show a significant growth in scores.

Finding 3: Normality test

The normality test was conducted after the results of the data description were obtained. The normality test is required to see whether the data is normally distributed or not. The researcher used SPSS version 25 to investigate the normality test using the Shapiro-Wilk test:

Table 5. Normality test

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	df	Sig.
Pre Test	.144	24	.200	.925	24	.079
Post Test	.166	24	.087	.929	24	.094

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Based on the table above, using Shapiro-Wilk, the sig value of the pre-test is 0.079 and the post-test is 0.094, meaning the score > 0.05. Then the data is declared to be normally distributed.

Finding 4: Hypothesis test

After conducting the normality test, the researcher analyzed the paired sample T-test data using SPSS version 25. This test was conducted to determine whether there is a difference between the two sets of data from the same sample. A Paired T-test was used because this research only had one group sample. The researcher analyzed the data to test the following hypotheses: H₀ (Null Hypothesis) There is no significant effect of the Plotagon Story Application in improving the speaking ability of 11th-grade students at SMAN 13 PADANG?" and H_a (Alternative Hypothesis) There is a significant effect of the Plotagon Story Application in

improving the speaking ability of 11th-grade students at SMAN 13 PADANG?” The result of the paired sample t-test can be presented in the table below:

Table 6. Paired t-test

		Paired Samples Test							
		Paired Differences					t	df	Sig.(2-tailed)
		Mean	Std. Deviation	Std. Error	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Pre Test	-14.583	15.089	3.082	-20.259	-8.207	-4.732	23	.000
	Post Test								

Based on the table above, the result of the data represents that the sig score (2-tailed) is $p < .001$. SPSS calculation if the sig score (2-tailed) $< 0,05$, then H_0 is rejected and H_a is accepted. It means that the Plotagon Story Application is effective in improving students’ speaking skills.

3.2. Discussion

The findings of this research indicate a substantial improvement in the speaking abilities of 11th-grade students at SMAN 13 Padang following the implementation of the Plotagon Story application. The empirical results indicate a significant increase in students' average speaking scores from 71 on the pre-test to 85 on the post-test. This improvement is directly tied to the unique pedagogical affordances of the Plotagon Story application in supporting speaking practice. Firstly, Plotagon effectively works as a 'digital shield' that reduces psychological barriers; instead of facing conventional front-of-class speaking anxiety, students act as directors, transferring their voice onto a 3D avatar. This arrangement lessens stage fright, giving students the freedom to practice oral expressions repeatedly without social pressure. The students are engaged in doing an activity using the Plotagon Story Application, and it shows the improvements in creating ideas, choosing characters and themes, etc. These findings are consistent with the test results, which reflect the students’ improvement in mastering speaking skills. Secondly, in terms of specific speaking aspects, Pronunciation and Fluency showed the most prominent growth. Because the platform offers real-time voice recording features alongside active character animation, students were continuously prompted to self-correct their intonation, stress patterns, and speed to match the dramatic movements of their characters. The active workflow of scriptwriting combined with verbal recording also expanded their operational vocabulary and contextual grammar use, shifting their learning experience from passive text absorption to structured, multi-modal production.

These findings strongly align with earlier speaking literature. The outcome supports the assertions of Alivi (2024). In research on the effectiveness of Plotagon Story Application as a project-based learning media, the study aimed to evaluate the impact of using Plotagon Story Application on speaking skills. The results show that using the Plotagon Story Application was

useful and enhanced the students' speaking abilities. It shows that project-based digital environments built into Plotagon directly boost students' active speaking abilities, confidence, and communicative fluency compared to conventional, static classroom tools. According to Usman (2015), who also conducted the research with the title "Think-Pair-Share used to improve students' speaking ability. And it is found that to solve the problems of the students of the Islamic Education Department of STAIN Ternate in speaking. It similarly parallels the findings of Iman (2024), who reported that Plotagon acts as a vital tool in expanding students' pronunciation scores due to its iterative audio-visual feedback loops, and Mudinillah et al. (2022) agreed that speaking skills could be improved by using Plotagon. This article found some advantages of this application, such as the fact that it can be used on laptops, PCs, and smartphones. Plotagon also provides easy experiences for creating your characters.

4. CONCLUSION

This research confirms that the Plotagon Story Application exerts a significant positive effect on improving the English speaking ability of 11th-grade students at SMAN 13 Padang, as shown by the statistical increase in mean scores from 71 to 85 and a $p < .001$. Practically, these results indicate that teachers should incorporate multi-modal software like Plotagon to replace teacher-centered frameworks, allowing students to independently explore ideas and build communication confidence. Schools are also encouraged to support this digital transition by providing adequate computer labs and technical infrastructure. However, this study holds certain limitations, primarily its reliance on a pre-experimental group design without a control class, which limits the ability to control external variables or compare the tool directly with conventional methods. Furthermore, the small sample size chosen via convenience sampling limits the generalizability of these findings to broader educational settings. Consequently, future researchers are suggested to employ true experimental designs on a larger scale with diverse age demographics, utilize randomized control classes, and investigate the long-term impact of Plotagon on students' overall language proficiency, creative skills, and confidence.

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