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# The Effect of Multimodal Digital English Book for Self-Learning in Elementary School

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**Abstract**

*The use of multimodal digital teaching methods for English has grown significantly. A small number of researchers, meanwhile, have looked at how elementary school students feel learning to tell stories in digital form using English as a second language. To bridge the gap, this study reports the effect of Digital Story Telling for Self-Learning of English in Elementary School. This research method uses experimental design using a control and experimental group. The research participants are 40 third-grade students from two elementary schools in Indonesia using random sampling technique. The results show that there is a significant influence of the use of multimodal digital English books with self-learning to learn English. According to the study, elementary school students can improve their self-learning and learn English by participating in multimodal digital English book.*

**Keywords**: *elementary school, English, multimodal digital, self-learning*

## 1. INTRODUCTION

As technology advanced and new literacy practices arose, our conceptions of literacy broadened to include media other than written text (Harste, 2010). According to Kim et al. (2020), Jewitt & Kress (2003), Kress & van Leeuwen (2006), The New London Group (1996), "multimodality"

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refers to texts that incorporate two or more semiotic systems or modes of communication, such as still images, moving images, writing, speech, sound, gestures, movement, layout, and spatial orientation. The increasing amount of research on multimodality emphasizes its benefits for education, especially its capacity to connect experiences both within and outside of the classroom and the chances it offers for identity formation (Kim & Li, 2020).

As early as primary school, students gain from exposure to digital texts because they acquire a variety of abilities necessary for interaction with the outside world (Burnett et al., 2006). As a result, digital multimodal composition has become a popular method for meeting the changing demands of students and is frequently utilized in language classrooms for various learning objectives (Hafner & Ho 2020; Hafner 2014; Shin, Cimasko, & Yi 2020). Digital multimodal composition has been shown to aid language learners in a number of ways (Bradley, Hunt, and Cole 2017; Yi, Shin, and Cimasko 2020); Umar, Khosiyono, & Irfan, 2023).

On the other hand, self-learning has been added to traditional learning, and the results have been excellent. Multimodal digital English book is also a powerful tool for student motivation and self-learning. Therefore, the goal of this study was to ascertain whether or not multimodal digital English books combined with contextual learning would enhance non-native speakers' vocabulary acquisition in elementary school. The study was conducted to better understand how third-grade students might improve their motivation and the efficacy of self-learning without guidance using multimodal digital English book. Additionally, some theoretical and practical consequences of this process were suggested.

## 2. LITERATURE REVIEW

### 2.1. Multimodal Digital

"A textual practice that involves the use of digital tools to produce texts by combining multiple semiotic modes" is a wide definition of digital multimodal composing (Jiang 2017, 413). Text, mode, and multimodality are the three main ideas in this definition. Gunter Kress's work from 2000 and 2010 is essential to the theory of multimodality and the development of an amazing body of work centered around these ideas. According to Anstey and Bull (2006), p. 100, a text is traditionally

seen as "meaningful units of written, or print, language" and is primarily connected to the linguistic semiotic system. Text is now often understood as "a complex semiotic entity…that includes linguistic and non-linguistic meaning-making resources (e.g., images, sound)" due to the expansion of the definition of text brought about by technological advancements (Yi et al. 2020, p. 2).

According to Elola and Oskoz (2017), mode is the semiotic representation that is utilized to convey information. Similarly, Yi et al. (2020) define mode as "both linguistic and non-linguistic meaning-making resources that a social group has made and used for cultural practices of communication." Five distinct modes of meaning-making were distinguished by the New London Group (1996): (1) linguistic (oral and written language); (2) visual (still and moving images); (3) audio (music and sound effects); (4) gestural (body language and facial expression); and (5) spatial (object layout and organization). Elola and Oskoz (2017) define multimodality as "the use of different modes in an integrated fashion to communicate meaning" (p. 53). Put differently, a text combines two or more modes to aid in the creation of meaning. We refer to these writings as "multimodal."

### 2.2. Self-Learning

In essence, situated learning is the process of giving meaning to everyday actions, where learning takes place in relation to the classroom setting (Prensky, 2005). A review of the assertions that situated learning is having a growing impact on education in general and mathematics education in particular was given by Anderson and his colleagues (Mayer, 2001). In terms of education, they examined the four main tenets of situated learning: (a) action is based on the specific context in which it takes place; (b) knowledge is not transferable between tasks; (c) training through abstraction is ineffective; and (d) instruction needs to take place in intricate, social settings. A crucial aspect of situated learning is the authenticity of the learning context, whether it is employed in clinical settings for patient diagnosis and treatment or simulated in university PBL (problem-based learning) discussions (Brooke, 1996). English can be learned effectively through situated learning. The simplest and most natural method of learning English is to use everyday objects as teaching resources. An interactive, collaborative, and real-world learning scenario

can be replicated in a virtual setting using computer technology and instructional design. This allows participants to engage with scenarios that enhance their problem-solving and thinking skills and improve their learning outcomes.

## 3. METHODS

This research uses an experimental design with two groups (one control group and one experimental group) (Montgomery, 2013). In two complete classes from third-grade students of two elementary schools in Yogyakarta, Indonesia. 40 participants—28 females and 12 males—participated in this study using random sampling. They were eight to nine years old. Each class was divided into two classes: available books (n = 20) and multimodal digital English books (n = 20). This study used a pre-test-post-test-follow-up design with randomized groups. The classrooms were assigned to the experimental and control groups at random, but the students were not. The English learning resources were used in twelve 45-minute classes per week. From August 2024 to October 2024, the lessons were delivered once a week. Beginning in September 2019, pre-test data on speaking abilities was gathered over several weeks. Three months later, immediately following the treatment, post-test data on the same variable was gathered. The first author gave each measure to students in the experimental and control groups in a group setting. Standardized tests were used to gather and analyze the data by IBM 26 version.

## 4. RESULTS

The control class was conducted at SD A, with 20 students and one teacher as an observer. Learning was conducted referring to the le that had been prepared without using a multimodal digital English book. Before conducting the learning, a pre-test was conducted with an average score of 40.95. After the learning, a post-test was conducted with an average post-test score of 62.15. In closing the learning, reflection was also conducted on teachers and students.

In the experimental class implemented at SD B, 20 students and one teacher were used as observers. Learning was carried out referring to the lesson plan that had been prepared using a multimodal digital English book. Before implementing the learning, a pre-test was first carried out with an average score of 38.8. After learning, a post-test was carried out

with an average post-test score of 83.4. In closing the learning, reflection was also carried out on teachers and students.

Based on the average value data obtained after a wider trial, it is proven that multimodal digital English books that include material explanations and online assessments can improve students' self-learning skills to learn English in the assessment process in learning. The results of the experimental test at SD A were obtained with an overall average value of 62.15 while in the trial at SD B the average value was 83.4. Thus, it can be concluded that multimodal digital English books can improve students' self-learning to learn English. Learning carried out in the control and experimental classes resulted in pretest and posttest learning values which were then carried out by the teacher using IBM regarding the normality test, homogeneity test and T-Test test.

The Normality Test aims to test whether in the regression model of the control class and the experimental class both have a normal distribution or not. If in the test of normality table using KolmogorovSmirnov the sig value > 0.05, then the data is normally distributed. In the normality test used the learning outcomes or posttest of the Control Class (group A) and Experimental Class (group B) using IBM One Sample Kolmogorov Smirnov histogram graph and the Shapiro-Wilk test.

However, conversely, if the significance value is <0.05, then the data used does not have a normal distribution. If the value is above 0.05, then the data distribution is stated to meet the normality assumption, and if the value is below 0.05, then it is interpreted as abnormal. Meanwhile, the decision-making criteria of the Shapiro-Wilk test are if the significance value is >0.05, then the data distribution meets the normality assumption, and if the significance value is <0.05, then the data distribution does not meet the normality assumption.

Table 1. Normality Test Using IBM

**Tests of Normality**

| | | Kolmogorov-Smirnov[a] | | | Shapiro Wilk | | |
|---|---|---|---|---|---|---|---|
| | Group | Statistics | Df | Sig. | Statistics | df | Sig. |
| Learning outcomes | Group A | .170 | 20 | .134 | .937 | 20 | .214 |
| | Group B | .219 | 20 | .013 | .833 | 20 | .003 |

a. Lilliefors Significance Correction

One Sample Kolmogorov Smirnov histogram graph and the Shapiro-Wilk test obtained the following results. Based on the table above, the provisions of the One-Sample Kolmogorov Smirnov test and the Shapiro-Wilk test show that the learning outcomes in the control class (group A) obtained significant results of 0.134 in the One-Sample Kolmogorov Smirnov and 0.214 Shapiro-Wilk test showed that there were abnormal results in learning that did not use teaching materials. While in the experimental class (group B) obtained significant results of 0.013 in the One-Sample Kolmogorov Smirnov and 0.030 Shapiro-Wilk tests showed that there were normal results in learning that used multimodal digital English book.

Table 2. Variance Homogeneity Test Using IBM

**Test of Variance Homogeneity**

| | | Levene Statistics | df1 | df2 | Sig. |
|---|---|---|---|---|---|
| Student Learning Outcomes | Based on Mean | 23,017 | 1 | 38 | .814 |
| | Based on Median | 8,014 | 1 | 38 | .512 |
| | Based on Median and with adjusted df | 8,014 | 1 | 23,172 | .512 |
| | Based on trimmed mean | 21,283 | 1 | 38 | .731 |

The homogeneity test aims to determine whether the research sample comes from a population that has a homogeneous variance or not. In this homogeneity test, researchers use the probability value parameter (sig) as a reference with the provision that if the probability value (sig)> 0.05 then the data has the same variance (homogeneous). Meanwhile, if the probability value (sig) The calculation of homogeneity is carried out by researchers when they want to compare the pretest results in two population groups is shown in the following table.

In the output above, it can be seen that the significance value (Sig.) of the homogeneity test result is 0.814. Because the Sig. value is 0.814 > 0.05, then as the basis for making decisions in the homogeneity test above, it can be concluded that the data of the control class and the experimental class are the same or homogeneous. Therefore, it can be concluded that both classes have a homogeneous or similar type and are feasible to carry out the trial. Thus, one of the requirements (not absolute) of the independent sample t test has been met.

The basis for making decisions or hypotheses in the Red Sample T-Test is by paying attention to the following two hypotheses. Firstly, H 0 : There is no difference in student learning outcomes before and after using Tri-N-based multimodal digital English book. Secondly, H 1 : There is a difference in student learning outcomes before and after using multimodal digital English book. The results of learning data using a multimodal digital English book can be seen in the table below.

Table 3. T-Test Using SPSS

**Paired Samples Statistics**

| | | Mean | N | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| English 1 | Pretest | 38.8000 | 20 | 6.84874 | 1.53143 |
| | Posttest | 83.4000 | 20 | 3.74728 | .83792 |

**Paired Samples Correlations**

| | | N | Correlation | Sig. |
|---|---|---|---|---|
| English 1 | Pretest & Posttest | 20 | .602 | .005 |

| Paired Samples Test | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Englishred Differences | | | | | t | df | Sig. (2-tailed) |
| | | Mean | Std. Deviation | Std. Error Mean | 95% Confidence Interval of the Difference | | | | |
| | | | | | Lower | Upper | | | |
| English 1 | Pretest - Posttest | -44.60000 | 5.48107 | 1.22560 | 4.13435 | 5.53612 | 5.612 | 19 | .000 |

As a provision of significant value is less than 0.05 with t count value is greater than t table. Significant value 0.001 <0.05 with t count 5.612 greater than 2.009. According to table 3, the t test (partial) shows that the significance value of digital teaching materials on improving language skills is 0.001 <0.05 and the value with t count 5.612 is greater than 2.009, then H0 is rejected and H1 is accepted. It is concluded that there is a significant influence of the use of multimodal digital English books with self-learning to learn English.

## 5. DISCUSSION

Multimodal Digital English books is those that are available on computers or smartphones that allow students to access additional elements like animation and music-accompanied sound effects while reading a text (Jewitt et. al., 2016). For both adults and children, this book can be utilized as a learning tool, including for English. A range of multimedia and sensory components, including sound effects, animated graphics, and digital voice narration with text explanations, are present in today's children's electronic books. All of these online novels were picked to help students improve their reading habits by encouraging them to enjoy reading on their own (Hafner & Ho, 2020).

Multimodal Digital English book instruction can boost students' enthusiasm for self-learn (Nuriyanti, 2024). This is demonstrated by the T-test findings, which showed a t count of 5.612 greater than 2.009 and a significant value of 0.001 < 0.05. Since students can independently control additional features like sound effects, animations, and even music that are woven into the text being read, children are particularly engaged and enthusiastic when they learn online. In this case, interactive multimodal

digital English book offer a variety of fascinating materials (Djonov et al., 2021). In this case, the parent or teacher's job is to assist the student in learning from the digital book, particularly if they are having trouble using a feature.

In English classes, storytelling (MDST) has been practiced. Multilingual digital book has been shown to significantly improve literacy, language, and knowledge (Jones & Chapman, 2017; Widodo, 2016). The use of Multilingual digital book in adult-oriented language acquisition has been the subject of prior study, but contemporary work has rarely examined young learners, such as youngsters between the ages of 10 and 12 (Pappamihiel & Knight, 2016). Articles discuss the usage of multilingual digital storytelling in Indonesian elementary schools as a practical solution to this gap. First, we would like to give some background information on English in Indonesian schools. English has been taught in Indonesian elementary schools since the 2000s (Widodo, 2016).

Many researchers have stressed that in order to support and help children in creating digital stories, teachers must understand and be knowledgeable about them (e.g., Fleer, 2018; Klerfelt 2007; Leinonen & Sintonen, 2014; Palaiologou & Tsampra 2018). Fleer emphasizes the importance of the proximate teacher, who interacts, supports, and builds relationships with the children during the process (2018). For instance, the supporting teacher would be needed to assist students in creating a digital story in order to facilitate turn-taking and plan activities (Fleer 2018). According to Klerfelt (2007), short instructions, like those about technical topics, can sometimes be beneficial; however, a deep and nuanced engagement with children is essential while crafting the story.

## 6. CONCLUSSION

Teachers should be aware of students' requirements, desires, and challenges before conducting instruction and developing online resources, according to the most discussed points. Teachers must to be conversant with the online resources as well. Additionally, interactive multimodal digital English books can improve students' technical abilities, reading comprehension, digital literacy, and self-learning. They can even encourage students to study English in a meaningful way. Additionally, it can support and meet the needs of students in the

millennial age, who are likewise engaging in some online activities with their devices and digital platforms.

Teachers, schools, and other stakeholders should all take into account the requirement for digital resources to enhance language learning in order to help students understand online or even hybrid learning in the future. Teachers should also focus on their students' literacy abilities, which include reading a lot of material from a variety of online sources, including e-books and e-journals. The millennial generation of students is characterized by how frequently they use gadgets and do online media searches in their daily lives. These electronic books are not simply PDFs; they are actual digital books with a variety of multimodal interactive forms, including animation, audio, video, attached links, and more.

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