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The Impact of Electronic Storybook and Print Picture Book on the Reading Comprehension of Undergraduates with Varying Levels of Critical Thinking

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Abstract

Information technology has changed many aspects of life, including how people consume media and information using tablet PCs, iPads, cellphones, computers, internet access, and electronic books. These advancements boost the capacity of teaching and learning processes to fulfill the digital world's needs successfully. This study explored the impact of introducing an electronic storybook in the experimental group and a print picture book. The sample was drawn from two classes of 29 students each for the experimental and control groups at a private university in West Java, Indonesia, using a factorial 2 x 2 quantitative research design. A questionnaire and a test were used as tools, and the data was analyzed using a two-way ANOVA. The conclusions demonstrated a substantial difference in the experimental and control groups' reading comprehension achievement. In the Basic Reading Comprehension course, students with a high degree of critical thinking outscored those with a low level of critical thinking. There was a link between teaching media and students' critical thinking skills regarding undergraduate reading comprehension ability. These findings also encourage teachers to employ electronic storybooks to teach reading and help students build critical thinking skills. Texts and technology are used to facilitate meaningful learning. More research and development on various books and educational materials is recommended.

Keywords: *electronic storybook, print picture book, students' reading comprehension achievement, critical thinking skill Level.*

1. Introduction

Literacy abilities in the twenty-first century are closely linked to the demands of reading skills, which lead to the ability to interpret information analytically, critically, and creatively as they encounter various types of texts in their daily lives due to the proliferation of global access to information. Today's intellectual and technical advances are rapid. Within academics, there are teaching-learning techniques for education. According to Puspitarini and Hanif (2019), learning helps students build knowledge, master specific competencies, and shape their attitudes. As a result, learning is the most crucial process in education for ensuring that students acquire the information, knowledge, and skills they require.

According to McKee (2012), reading is an important skill people must learn to succeed. It keeps people informed, current, and thinking. In light of its aim, reading is one strategy

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for gaining knowledge, insights, or value from a text. Nowadays, information spreads quickly through online social media platforms such as Facebook, Instagram, WhatsApp, Twitter, and others. Because these sites are becoming more integrated into people's daily lives, literacy practices have shifted from traditional to digital literacy (Baker, 2001). Students are reading text in several modes, such as printed material on paper or in a book, as well as multimodal and multi-semiotic texts that require a particular ability to interpret the information presented. Music, graphics, tables, art, and visual text portray texts in various ways (Kuo, 2014).

More than a normal set of language skills is required for EFL students these days (Harste, 2003). They have to evaluate information from various sources, including written and online. To do this, they must be more proactive and responsive to respond critically to the information (Anwas, 2013). It is related to the wider issue of fake news or hoaxes spreading quickly around them. The truth is that anyone can create such information without giving evidence that it would cause harm to others. Reading is one method of gaining knowledge, meaning, or value from a text. Reading aims to gain a literal or figurative understanding of a word or piece of text that the reader may share or discuss. According to Patel and Jain (2008), learning to read is one of the most significant talents a person can develop, and it is also a crucial aspect of learning English. It delivers satisfaction and benefits to pupils who read correctly.

Experts and teachers in the present digital era have embraced electronic media as a tool to provide readers with personalized, multimodal, and tailored linguistic input to fit their needs and enhance motivation and engagement (Grimshaw, Dungworth, McKnight, & Morris, 2007; Hermena et al., 2017). Many say that reading on paper is more useful to comprehend than reading on electronic media because readers employ different strategies and cognitive processes depending on the medium they are reading in (Chen et al., 2014; Pardede, 2019). The number of research comparing electronic books to paper books has rapidly increased. Reading from print books and computer screens is significantly different in many ways. Readers of digital books, for example, can explore a nonlinear medium.

In contrast, readers of print books are constrained to following a single linear narrative (Eshet-Alkalai & Chajut, 2010). According to prior studies, when reading digital books, students report feeling more cognitively taxed and having poorer memory recall than when reading print texts, resulting in less comprehension than when reading print materials (Liu, 2005; Mangen & van der Weel, 2016). Numerous research studies have determined that reading print books is superior to reading e-books since browsing and scrolling through digital versions of books lengthens reading time and lowers information memory (Porion et al., 2016). Although numerous research studies have focused on employing digital materials in the classroom as a teaching aid, most of them (Nelson, 2008; Salajan et al., 2010) concentrated on how e-books assist general learning rather than language learning. Reading comprehension between print and electronic books is a significant issue due to various confusing reading comprehension results observed in the EFL context (Reich et al., 2016).

Some research (Halamish & Elbaz, 2020; Kerr & Symons, 2006; Stle et al., 2020; Mangen et al., 2013; KazazoLu, 2020; Singer & Alexander, 2017) suggest that print media is superior to computer screens in terms of assisting students of various levels in understanding what they are reading. Several studies (Kerr & Symons, 2006; Singer & Alexander, 2017) have found that how well readers understand what they read is closely related to the written material. Singer and Alexander (2017) conducted a study with 90 US college students learning their L1. They discovered that as long as the students could figure out the key themes of the texts, there was little difference between reading on paper and reading on a computer. On the other hand, the print group remembered more key parts of the text and other important facts. Even though the computer screen presentation was identical to a written text (Kerr & Symons, 2006), primary school pupils

read the printed book faster and recalled the material better than those who read the text on computers.

Compared to digital texts, printed texts may only occasionally assist readers in understanding what they are reading. According to certain research, their reading comprehension was the same whether students read printed or digital information. Sage et al. (2019) investigated how much time college students spent reading in their first language (L1) and how well they understood what they read on paper, computers, and tablets. The same results were obtained with EFL students. Lin et al. investigated the effects of a 14-week reading program with a paper textbook or a mobile-based e-textbook on Thai EFL college students in 2021. Both groups performed well with words and comprehension of what they read, implying that the medium type may not be relevant in predicting reading growth. Even though they used digital materials outside the classroom more frequently and were aware of their advantages (such as portability), participants in both studies preferred print reading over digital reading. Kaban and Karadeniz (2021) discovered that reading on a computer or paper did not affect how effectively Turkish EFL primary school pupils understood what they read after five weeks. However, the children were more interested in reading on computers.

Previous research has not been able to determine whether e-books positively or negatively impact second-language reading (Isaacson, 2017). Other studies have found that student participation is critical for digital e-books to flourish where print books have failed. According to O'Brien and Voss (2011), engaged students were more likely to read and comprehend. According to Krause (2013), reading instruction must adapt to the rapid changes brought about by the digital age. Less experienced readers should be given special consideration because the reading materials harmed them, and they may have needed assistance utilizing digital gadgets (Harrison, 2016). Several studies (Grimshaw & Dungworth, 2007; Kang et al., 2009) regulated the aspects of paper and screen presentation to be as close as possible. They reported reading comprehension scores in different mediums. According to the findings, there was no noticeable difference in reading comprehension between students who read print books and those who read digital literature.

This study aims to look at the impact of employing print picture books and electronic storybooks on undergraduate students' reading comprehension abilities while considering different levels of critical thinking. Given the growing popularity of digital media, it is critical to investigate whether digital educational tools and traditional print materials can boost reading comprehension abilities. This research will also shed light on the potential benefits and drawbacks of these tools for various student subgroups by studying their impact on students with varying levels of critical thinking.

2. Related Work

2.1 E-storybook

The majority of the studies that have been conducted on the effectiveness of utilizing electronic books in assisting individuals in acquiring reading skills have been conducted in English. Both Korat (2010) and Smeets & Bus (2015) concluded that children can boost both their vocabulary and their level of comprehension by reading e-books. However, Chiong, Ree, Takeuchi, and Erickson (2012) found that children who read books in electronic format retained much less information from those books than children who read the same book in print. They speculated that the reason for this was that the youngsters were more interested in the aspects of the book that had nothing to do with the plot than in the story itself. Davis (2012) discovered that the multimedia aspects of e-books distracted readers, making it more difficult for them to understand the tale and reducing the likelihood that they would remember it. Studies that specifically investigate

whether or not particular characteristics of e-books may improve literacy and learning have yielded various results. These studies examined whether certain aspects of e-books could improve literacy and learning. For instance, O'Day (2007) revealed that animations assist people in learning things more efficiently in the long term than static visuals. This was identified concerning the retention of information. However, other research (Zucker, Moody, and McKenna, 2009) indicated that distracting elements in low-quality e-books may hinder students' ability to learn rather than assist them. According to the findings of Chau's (2008) research, animations and sound effects can divert children's attention and make it more difficult for them to comprehend. (Wouters, Paas, and Merrienboer, 2008; Korat, 2010; Moody, 2010; Smeets & Bus, 2015) The consensus among industry professionals is that the incorporation of multimedia aspects into electronic books ought to be done with great care and following applicable standards and theories. This will assist readers in gaining further knowledge from the books.

2.2 Picture book

Most publications and papers the writer has seen state that picture books help students become more motivated to read. Three different researchers' investigations substantiate this claim: Hsiu-Chih (2008) evaluated the impact of children's picture books in Taiwanese classrooms where English is taught as a foreign language. The research focused on teachers' attitudes toward using children's picture books in English language classes. The study's teacher participants noted several key educational benefits of employing children's picture books in English language training settings. The findings revealed that children's picture books provided linguistic benefits, allowing them to improve their reading, critical thinking, and vocabulary skills. Picture books' illustrations also motivate students to learn. When students study through picture books, the likelihood that they will be engaged in class improves. Ho (2000) conducted a second study over three years in which picture books were utilized to teach literacy and language skills to English language learners. The study participants were divided into three groups of 20 students each. Following the training, the students were observed and quizzed. According to the findings, most language and literacy tasks and activities, such as pronunciation, developing literacy skills, critical reading, and multicultural awareness, were generally well-received by students. The findings of this study indicate the pedagogical value of picture books. Furthermore, according to Lee (2015), students enjoyed picture books. They felt their English skills had improved, particularly in drive and confidence. Picture books containing fictional characters, such as comic books, are more effective in teaching reading than general texts and visuals.

2.3 Critical Thinking

Critical thinking is typically intertwined with other disciplines, such as four language abilities (reading, listening, writing, and speaking), mathematics, physics, and many others. Recent research on integrating critical thinking and language abilities discovered that reading and writing skills improve dramatically when necessary thinking skills are included in the teaching and learning process (Crook, 2006; Scanlan, 2006). Another study by Niewoehner and Steidle (2008) tried to link critical thinking with leadership lessons that could survive the loss of the space shuttle in Columbia. Based on this inclusion, the following part will build many reading approaches that connect reading and critical thinking skills. Several more studies have examined the impact of substantial reading on critical thinking and how the amount of reading can influence critical thinking growth. For example, Jimenez, Haydee, Rosales, and Soraya (2010) did a study in El Salvador to see if reading for pleasure may help English as a Second Language (ESL) students strengthen their critical thinking skills by exposing them to the real world. Their findings revealed that the students had gained a knowledge of the scientific reading style, which helped them to compose their arguments coherently. According to the study's findings, students who read widely were better able to utilize the knowledge they obtained to build a rational framework for tackling the issues they would face in the real

world, increasing the possibility that they would make better decisions throughout their careers. Another study on using critical thinking abilities in reading was conducted at a Minnesota Intensive English Program (IEP), with 61% of the students originating from Saudi Arabia (Wong, 2016). It was revealed that those children were more likely to prefer oral reading as a direct technique because memory rather than recitation was an intrinsic part of their culture. Reading was initially challenging since the kids had to read in a different code than their own; however, the following collaborative activities helped the students with difficulty. The first stage involved analyzing and inferring ideas from the text. The second stage was to engage students in critical thinking and problem-solving exercises that encouraged them to create answers to real-world situations. The ultimate goal was for them to solve such issues.

2.4 Reading Comprehension

Reading has become essential in teaching and learning English as a foreign language. Reading comprehension is "the activity of comprehending the messages of a specific text" (Williams, 1998). Reading in a foreign language (EFL reading) is frequently incorporated into reading comprehension instruction in Indonesia. According to Kweldju (2000), although reading is an important language skill, many students need help reading in English as a foreign language. Furthermore, it has been noted that many EFL reading students require additional motivation to read (Kweldju, 1996; Rukmini, 2004). Kweldju (1996) discovered that, while perceiving that these textbooks were beneficial, students required additional motivation to study them. She said that the student's lack of interest was due to a lack of background information, an inability to comprehend the text's content, and a complicated organizational structure. To extract and construct meaning, understanding requires coordinating skills at multiple levels. The extent of the obstacle to understanding the content of a certain text was used to assess the language's complexity (Qarqes & Rashid, 2017).

There are numerous differences between Indonesian English and the original language students speak in everyday interactions.

3. Method

Design: The experimental design with a 2x2 factorial design was employed in this work. The purpose of this study was to compare two instructional mediums (such as the usage of electronic storybooks and print picture books) and two levels of students' critical thinking (high and low) at Universitas Bale Bandung Fakultas Keguruan dan Ilmu Pendidikan, a private college in West Java, Indonesia. This study also included three factors: Reading comprehension is one dependent variable. The kids' critical thinking ability is one independent variable. E-storybook instructional media and print picture books are two independent factors. The research strategy is outlined in Table 1. During the study, internal and external validity were managed as well as possible.

Table 1 Factorial research design 2x2.

Teaching Media (A)	Electronic story book (A1)	Print picture book (A2)
Students' critical Thinking (B)	As an Experimental class	As a control group
High (B1)	A1B1	A2B1
Low (B2)	A1B2	A2B2

A1B1: Students who have high critical thinking skill level are taught by using electronic storybook.

A2B1: Students who have high critical thinking skill are taught using print picture book.

A1B2: Students who have low critical thinking skill level are taught by using electronic storybook

A2B2: Students who have low critical thinking skill level taught by using print picture book

Participants: The 58 undergraduate students for the research sample were chosen through purposive sampling, including 17 males and 41 women majoring in the English Language Education Study Program. They were enrolled in a Basic Reading Comprehension course during the entire semester. There were two groups of students: those who received electronic storybooks and those who received print picture books. In addition, the students were separated into two groups depending on their critical thinking abilities: high and low.

Instruments and Procedures:This study employs two types of instruments. They are questionnaires for critical thinking and reading comprehension tests. Faction's (2015) Critical Thinking Disposition Self-Rating Form (CTDSRF) created the critical thinking questionnaire. The self-rating form for critical thinking employed a five-point (1–5) scale. Always (1), often (2), occasionally (3), seldom (4), and never (5) on a 5-point scale. The 20-item critical thinking questionnaire assessed learners' critical thinking in their reading process, which included truth-seeking, open-mindedness, analyticity, systematicity, confidence, curiosity, and cognitive maturity. Meanwhile, a reading comprehension test was performed to compare students' EFL reading achievement before and after receiving interventions from the electronic storybook and print picture book. The information was gathered in sixteen meetings over the course of a semester. During the first meeting, both groups were handed critical thinking questionnaires to complete in twenty-five minutes. The experimental and control groups were then given a sixty-minute reading comprehension test. The learning activities in each meeting were meant to help students recall prior knowledge, solve comprehension questions, learn terminology from the text, and practice critical thinking. The teacher activated students' prior knowledge before reading by discussing the book's topic. The speaker then supported students in grasping the text throughout the reading stage by locating the text's primary ideas and facts, making inferences from the text, identifying the writer's intent and attitude, and so on. Following the reading stage, the instructor and students engaged in a variety of activities, such as asking questions at the end of a story to allow students to reflect on their reading and relate it to their own experiences, allowing the instructor to assess how well the students understood what they had read and whether they grasped the main ideas. As part of the control group, EFL students engaged in picture book reading activities in the classroom. The learning activities included pre-reading while reading and post-reading activities. The lecturer gave the picture book's title and requested the students to infer the plot from the cover art during the pre-activity. The speaker encouraged the students to closely inspect the image and discuss what they felt could happen and any questions they had. The instructor asked the students to read aloud and undertake character analysis, which required characterizing the character's looks, behavior, and actions based on the readings. In the post-activity, students create pictures of a selected situation from the text and describe it in their own words. This allows kids to demonstrate their originality and knowledge of the text.

Data Analysis: In the context of data analysis, the classification of learners' critical thinking skills as either high or low was determined by evaluating their questionnaire responses. A statistical inquiry was conducted to determine the average and standard deviation of the reading comprehension test scores. The researchers employed a two-way analysis of variance (ANOVA) test to do an inferential analysis of the outcomes of the post-test administered to both the experimental and control groups, categorized based on the students' levels of critical thinking skills, namely high and low. The statistical analysis software SPSS 23 was employed.

4. Result

According to statistical research, learners who took electronic storybook lessons had greater reading comprehension results than those who used a print picture book. The descriptive test results revealed the first finding: the e-storybook group's mean score was higher than the picture book instruction group's (78.87 > 76.26). Furthermore, the two-way ANOVA test demonstrated a significant difference in reading comprehension success between students taught using e-storybook media and those taught with print picture book media. A previous study has backed up this finding. However, previous research has found that printed texts have higher levels of reading comprehension than e-books (Halamish & Elbaz, 2020; KazazoLu, 2020; Kerr & Symons, 2006; Mangen et al., 2013; Reich et al., 2019; Salmerón et al., 2021; Stle et al., 2020; Singer & Alexander, 2017). Earlier studies, however, did not examine pupils' critical thinking skills independently but instead tested overall reading comprehension. In this investigation, a two-way test of Variance (ANOVA) with a level of significance = 0.05 was used. The three theories were investigated. There were two criteria before employing the two-way ANOVA: normality and heterogeneity. The normality test was used to determine whether the data under consideration originated from a normally distributed population. The testing method used is the Kolmogorov-Smirnova test with a 0.05 threshold of significance. The efficacy of learning both e-storybooks and print picture books was calculated using the Statistical Product and Service Solution (SPSS) 23 application for Windows, the results of the normal test, and the existing data in Universitas Bale Bandung's Faculty of Teacher Training and Education offers a study program in English language education. This is more than the 0.05 level of significance. The normal distribution of the data is thus determined. The normalcy test was performed using the Lilliefors test, as shown in Table 2.

Table 2 Data normally distributed

Test of Normality						
	Kolmogorov- Smirnova[a]			Shapiro –Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Standardized Residual for achievement	.092	58	200*	.963	58	.534

a. Lilliefors Significance Correction

Examining the validity of one of the ANOVA's assumptions—that all variations have the same variance—is the goal of the homogeneity test. Examining Levene's test probability or significance of 5% (0.05) is one way to decide. The SPSS homogeneity test came back with a significant value of 0.062, which means that Ho is accepted (higher than 0.05) and the research data are similar and have the same variance. The data presented above can then be used to test additional hypotheses to determine whether the ANOVA's assumptions are correct. This is illustrated in Table 3 below.

Table 3 Levene's Test of Equality of Error Variancesa

Dependent Variable: Learning Effectiveness

F	df1	df2	Sig.
2.558	3	54	.062

Tests the null hypothesis that the error variance of the dependent variable is equal across groups

Table 4 Descriptive Statistic

Dependent Variable: Reading Achievement

Teaching Media	Critical Thinking Level	Mean	Standard Dev.	N
E-story book	High	78.87	2.487	17
	Low	75.12	2.568	12
	Total	76.99	2.541	29
Print picture book	High	76.26	4.480	14
	Low	72.40	4.177	15
	Total	74.33	5.543	29
Total	High	77.57	4.431	31
	Low	73.76	4.715	27
	Total	75.67	4.734	58

The mean score calculated from students' reading scores based on teaching medium and critical thinking levels is shown in Table 4. Students with high critical thinking levels taught using an e-storybook scored higher on average than those with low critical thinking skills. Students with strong critical thinking levels taught through print picture books had higher mean scores than students with low critical thinking levels. However, the chart shows that the total mean score for the e-storybook and print picture books as a control group is greater for the e-storybook than for the print picture book method. This is a summary of the two-way ANOVA calculation, which shows the differences between the means of the mean score, the teaching method, the student's critical thinking skills, the interaction, the errors, and the treatment. Following this description of the analysis of variance, it is easier to consider the analysis of the two-way ANOVA, as shown in Table 5. This two-way ANOVA computation result summary can be used to explain or support testing hypotheses. The above table's concept could be related to hypothesis testing. The testing hypotheses could be concluded to be validated. The results of between-subject effects tests will be utilized to decide whether the alternative hypothesis is accepted or rejected. Since the significance of instructional media is 0.000, which is less than 0.05, there are different scores based on factor variables. The significance of the critical thinking ability level is 0.000, which is less than 0.05 and results in scores based on factor variables. The correlation between students' reading scores and critical thinking ability is 0.006, less than 0.05. The three hypotheses are confirmed at alpha 0.05, as seen in the results below. The following assertions are correct:

1) Students obtain higher reading comprehension levels When taught with an electronic storybook than when taught with a print picture book.

2) Students with high critical thinking skills outperform those with inferior critical thinking skills in reading comprehension achievement.

3) In reading comprehension, there is a relationship between the instructional medium and the student's critical thinking skill level.

Table 5 Tests of between-subjects effects.

R Squared = .470 (Adjusted R Squared = .443)

Dependent Variable: Reading Achievement

Source	Type III Sum of Squares	df	Mean Square	F
Corrected Model	644.668[a]	3	208.618	17.430
Intercept	361627.826	1	361627.826	28525.816
Media	263.160	1	263.160	21.668
Critical Thinking	292.055	1	292.055	23.284

Media Critical thinking	99.411	1	99.411	8.163
Error	730.028	54	12.423	
Total	364221.000	58		
Corrected Total	1365.827	57		

Table 6 Critical Thinking Skill Level

Dependent Variable: Reading Achievement

Critical Thinking Level	**Mean**	**Std. Error**	**95% Confidence Interval**	
			Lower Bound	**Upper Bound**
High Critical Thinking	**79.075**	**.627**	**77.819**	**80.330**
Low Critical Thinking	**74.763**	**.636**	**73.489**	**76.036**

Table 7 Teaching Media

Teaching Media	**Critical Thinking Level**	**Mean**	**Std. Error**	**95% Confidence Interval**	
				Lower Bound	**Upper Bound**
Electronic story book	High critical thinking level	78.87	.848	78.145	80.502
	Low critical thinking level	75.12	.869	76.322	78.887
Print picture book	High critical thinking level	76.26	.889	76.426	79.896
	Low critical thinking level	72.40	.912	68.470	73.430

5. Discussion

According to statistical research, learners who used e-storybooks in their classes outperformed those who utilized picture books. The descriptive test results confirmed the initial finding: the mean score of the e-story book group was higher than that of the picture book group. Furthermore, because the F-value in the two-way ANOVA test was greater than the F-table, it was proven that there was a significant difference in reading between students taught by picture books and students taught by e-storybooks. It showed that the e-storybook had a significant impact on reading comprehension. Previous studies on the impact of e-story books on struggling readers' reading comprehension, such as those by Doty (1999, 2001), Chan Lin (2001), Pearman (2003, 2008), Grimshaw et al. (2006), Pearman and Lefever-Davis (2006), and Shamir et al. (2008), support this conclusion. According to Tables 5, 6, and 7, students' performance in reading comprehension using the electronic storybook medium improved dramatically when e-storybooks were introduced in the Basic Reading Comprehension class. According to Pourhosein (2014), technology "can create a learning environment centered on the learner rather than the teacher, resulting in positive changes." For various reasons, students who utilized e-stories in their lessons may have enhanced their reading comprehension. For starters, including electronic storybooks in the classroom increased students' interest and drive. Most students actively participated, were motivated to read, and were kept interested, enhancing their comprehension abilities. This is supported by additional studies (Khomah, 2019), Ciampa (2012), and student motivation to read electronic book posters. Ertem (2010) claims that electronic books can help struggling readers improve their reading comprehension. Additionally, English language learners actively participated in improving their reading comprehension by using electronic storybooks. Vocabulary dialogues in college teacher-learner and learner-learner classrooms were lively because e-storybooks provided pronunciations of uncommon words, supporting

students in extending their vocabularies and interpreting the texts. This finding was consistent with a prior study by Khorat and Shamir (2007), which investigated the impact of e-storybook implementation on reading achievement. Their research also indicated that electronic storybooks could help children develop phonological awareness, word identification, and meaning. Using electronic storybooks allows teachers to expand their creativity in connecting material to students' needs more engagingly. It is the marriage of modern educational growth with technology. Technology is important because it allows for new ways of language practice and performance evaluation (Diem, 2011). If students can imagine and excite their imaginations, they will be more eager and interested in reading. Visual assistance in an electronic storybook aids in acquiring information and mental representation. An electronic image storybook might be unique and inventive as a guide for their literacy practice. The two-way ANOVA calculation findings show that critical thinking significantly impacts pupils' reading comprehension success. The study's second finding indicated that learners with strong critical thinking skills outperformed learners with low critical thinking abilities after using an e-story book in their lessons. The descriptive analysis revealed that the mean score of the high critical thinking group was higher than that of the low. This finding was consistent with recent research by Hidayati, M., Inderawati, R., Loeneto, B. (2020), and Zabit (2010), which showed that critical thinking and reading comprehension are linked in language learning. The computation of the F-value revealed a significant difference in reading comprehension between students with high critical thinking abilities and students with low critical thinking abilities. In other words, critical thinking significantly impacts reading comprehension skills. According to the cumulative mean, students with good critical thinking outscored those with low critical thinking. According to the cumulative mean, students with good critical thinking outscored those with low critical thinking. It is because students with strong critical thinking skills are more engaged in their study, are more enthusiastic about the tasks provided by the professor, and never grow bored striving to achieve the best possible result in reading comprehension. The interaction can be further investigated using the Tuckey test to validate it. The Tuckey test was used to investigate the association between students' critical thinking abilities and the use of electronic storybooks in the context of reading comprehension teaching. The data suggested that utilizing electronic storybooks was connected with lower levels of critical thinking. In comparison, adopting electronic storybooks to improve reading comprehension skills was connected to higher levels of critical thinking.

6. Conclusion

The findings of this study indicate that improving EFL students' reading comprehension by having them study reading comprehension using electronic storybooks and print picture books is possible. It also demonstrates that students with strong critical thinking abilities perform better on reading comprehension tests than those with weak critical thinking skills. According to the findings, EFL reading comprehension can be significantly improved through electronic storybooks and print picture books, as well as through the development of critical thinking skills. As a consequence of this, both the high-level and the low-level students of critical thinking found the two separate ways to be beneficial in the process of teaching reading comprehension. This research suggests that professors at colleges and universities should design language learning programs supported by electronic or internet-based media to urge their pupils to learn.

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