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The Effect of Electronic Storybook and Print Storybook on Students' Reading Comprehension Skill Based on Their Learning Styles

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Abstract. The change from printed to electronic content has an impact on students' reading comprehension and reading style. This article presents experiments designed to assess the influence of electronic text on the reading comprehension of the second semester students of English Language Education Study Program. This study aims to ascertain whether there is a substantial difference in basic reading comprehension achievement between students with visual, auditory, and kinesthetic learning styles. In this article presents two experiments designed to assess the effect of electronic text on the basic reading comprehension of second-semester students. In the first trial, 72 students read either electronic or printed storybooks in learning basic reading comprehension course. This study found no statistically significant difference between open-ended questions and a test for measuring basic reading comprehension. There was, however, substantial statistical difference in reading comprehension between students with different learning styles, for the group who read the electronic versions of the stories, as determined by e-storybook. As measured by test of basic reading comprehension, their comprehension of the e-book stories was significantly greater. Thus the result of this research shows there are no there are no notable distinctions between the auditory, visual, and kinesthetic styles of learning derived from the basic reading comprehension learning outcomes of students who were taught using an electronic storybook or a print storybook.

Key words: electronic storybook; print storybook; reading comprehension; and students' learning styles

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INTRODUCTION

In this internet age, global access to information has made significant contributions to many aspects of human life, including the tremendous changes in education. Computers, tablets, and smartphones, together with other recent technological advances, have led to a transition from print to digital reading and an expansion of online education options (Pardede, 2019; Sage, Augustine, Shand, Bakner, & Rayne, 2019). This expansion has changed how people read in homes, schools, colleges, and universities because the information is so easy to get. Using the internet to read gives people access to a broader range of topics in less time, and the graphics and animations could make reading more interesting for some people than traditional printed books.

One of the crucial components for students to do better in their academic work is reading comprehension in English. According to Breiseth (2016), the purpose of reading is comprehension, but for English language learners, in particular, it can be the most challenging ability to achieve. This is in line with Smith, Mikulecky, Kibby, Dreher, and Dole (2000), reading is crucial for understanding the world, learning new things, honing higher-order thinking abilities, succeeding personally, and giving back to society. Reading is described by Alyousef (2006) as an "interactive" activity that results in automaticity between the reader and the text. This idea holds that the interactive process starts when the reader tries to comprehend the text by looking at the data. Readers use any information and tools provided in the text to find pertinent details. Students can use reading comprehension strategies to determine the meaning of what they have read. The techniques presented in the Reading Comprehension section enable students to engage with fiction and nonfiction to comprehend and respond to questions about what they have read. Reading comprehension skills enhance the enjoyment and utility of reading. Excellent reading comprehension abilities are beneficial in all other subjects, as well as in the individual and professional realms. Most people read differently now than they did in the past few years. Even though the

print may not be dead, people worldwide read digital screens all the time. Even though this study focuses on e-books and printed books, we had to talk about the internet. The internet is the biggest threat to print media like newspapers, books, and libraries (Loan, 2011).

The Covid-19 pandemic has caused damage across the globe. It has an effect not only on the economic side but also on the educational side, where educators must act swiftly and prudently to assure that the process of teaching and learning runs smoothly while the Covid19 outbreak is contained. Students around the globe have been instructed to study at home; therefore, distance learning technologies must be thoroughly researched. Due to school closings and social-distance rules during the coronavirus disease pandemic, numerous schools provided online sessions using digital materials, prompting the transition from paper-based to online learning (Sun, Loh, & Nie, 2021). It is anticipated that online education will continue after the pandemic. As a result, digital reading could no longer be a viable option, but rather a requirement for learning the first language (L1) and second or foreign language (L2) (Sun et al., 2021).

Since the pandemic, people have also learned online in almost every part of the world. Some parts of education help people learn so well that they can do it even when they don't see each other. Teachers or lecturers are an important part of formal education and are expected to respond to the change from traditional face-to-face learning to online learning. As happened at the University of Bale Bandung in Bandung, West Java, when it was said that all learning must be done online, all lecturers answered immediately. They made a plan for improving online education that included parts about how to teach, run and monitor online classrooms, and evaluate students' learning. They were also told to use learning platforms they already knew how to use. Even though all the preparations had been done well, that didn't mean they worked well. When making online learning, it's important to remember the different ways people learn.

Numerous technologies, from websites to downloadable apps, have been implemented in English language instruction as a teaching and learning medium. Each one facilitates the online transmission and reception of knowledge between teachers and students. Moreover, incorporating technology into the learning process is significantly more advantageous. Using computer technology, L2 teachers can perform specific pedagogical tasks effectively, which may be difficult in other environments (Pederson, 1986). According to Lock and Raihan (2010), the availability of modern technologies can enhance creativity, teamwork, and autonomy of students. Even though each has a purpose in English language instruction, it is limited to the purpose inherent to its characteristics. Others are designed to facilitate online classroom and file sharing, while others serve as evaluation instruments. The entire teaching and learning process must be done using all of them.

E-books are a computer-readable digital version of a printed book or other device with a flat-panel display. The text, images, or both can be seen on the screen. Tuah et al. (2019) say that e-books are printed books or papers scanned and turned into digital images, texts, or videos that can be viewed on a computer. Gibson and Gibb (2011) also say that an e-book is a book with exciting features that are presented in electronic form and have text in electronic documents. Digital book can be an excellent way to get students' attention and encourage them to finish the task. Reid et al. (2016) say that an e-book is a terrific way to help students understand the lesson because it has interesting features that get students excited about learning in the classroom, which is suitable for literacy improvement. Yalman (2015) also says that there are other advantages to students utilizing electronic books, like the fact that they can take them with them anywhere they travel and that they will benefit university students relieve a lot of stress. Ukwuoma and Akpokodje (2016) say that electronic books are some of the flexible and affordable technologies. They also say that access to the internet has made it easier for young people to use cell phones at and outside of the classrooml. Also, Ciampa (2012) gave tests to students who use an online program for e-books. She found that students liked reading e-books and did so often when they had free time. So, the e-book is not only helpful for getting students to learn, but it is also helpful.

In contrast to traditional printed picture storybooks, electronic picture storybooks exhibit less uniform model elements (Roskos, Brueck, & Widman, 2009; De Jong & Bus, 2003; Korat & Shamir, 2004). E-books encompass an audio version of the text in conjunction with or in place of the printed text. Some books contain static illustrations, comparable to written tales, while others may contain animated illustrations.

The video books used in our research include animations that, at first glance, resemble cartoons. However, the spirits have been meticulously crafted to draw students' attention to images that are in sync with the spoken text. There may also be sound effects and background music in electronic picture storybooks. In addition, some electronic stories are intended to be read aloud, whereas others include games or other interactive elements, such as hotspots that reveal audio or visual effects.

Even though more and more studies have compared reading on a screen to reading on paper, there is no consensus on whether an online reading is the same, better, or worse for learning than printed reading. Also, most studies looked at how reading on a computer differs from reading printed materials. Reading on other digital devices was not looked at in these studies. Some studies with young children found that multimedia e-books helped them understand phonology, read at the word level, and learn new words (Bus, Verhallen, & de Jong, 2009; Korat, 2010). Other studies (Halamish & Elbaz, 2020; Mangen, Walgermo, & Brnnick, 2013; Stle, Mangen, & Schwippert, 2020) found that reading paperbacks helped English as a foreign language (EFL) students understand what they were reading more than reading on computers. Also, a few studies found no difference in reading skills between reading on paper and reading on a computer (Kaban & Karadeniz, 2021). (Kaban & Karadeniz, 2021).

Learning style is one of the most important factors affecting students' learning. It greatly affects how students learn, which in turn affects how well they learn. It talks about how students get information, store it, and use it. Students at the University of Bale Bandung preferred different learning style when they learned Basic Reading Comprehension course. Their way of studying makes them feel at ease and helps them learn and understand things quickly. Some students like to read a print book and learn the information by heart, while others need to make notes to help them understand the information. The other students would rather watch a video showing them how to do something than read a print book about it. There are different ways for each student to learn. They pick the easiest way for them to learn and understand the material.

METHODS

This research aims to evaluate if there is a statistically significant difference in reading comprehension ability between students with visual, auditory, and kinesthetic learning styles who are taught using electronic storybook and printed storybook. This investigation employs a quasi-experimental research that included a pre-test, a treatment, and a post-test. This test aims to determine if the sample changed following treatment. The experiment included two experimental classes. Experimental Group I was instructed to use an electronic storybook, while Experimental Group II was asked to use a printed electronic storybook. This study's participants were all second-semester English Language Education students at Universitas Bale Bandung in the academic year 2021/22. Cluster random sampling was used for this study's selection. If the population is dispersed in certain areas (clusters), they all have the same traits, then a random sample can be drawn from one group. Before administering E-storybook and Print storybook treatments, experimental and control class students must complete the pre-test. The purpose of the post-test was to assess the students' transformation following treatment. This study's population consisted of all Students in the English Language Education Study Program in their second semester at Universitas Bale Bandung, which included three classes with a total of seventy-six students during the 2021/2022 academic year. This study's design was based on a post-test-only control group described as follow:

R	X	O1
R		O2

where:
R = random;
X = treatment;
O1 = classes are taught using E-book;
O2 = classes are taught using print book

RESULTS AND DISCUSSION

The purpose of this study was to ascertain the impact of electronic storybook and print storybook on second semester English Language Education students at Universitas Bale Bandung, considering the students' visual, auditory, and kinesthetic (VAK) learning styles. Students were assessed for their comprehension of Basic Reading after the learning process, and the test results were then analyzed using SPSS version 20.

Table 1: The study outcomes of pupils taught via e-storybook and print book were tested using independent samples (independent samples test)

		Levene's equality test for variances		T-test for equal variances						
		F	Sig	t	df	Sig (2-tailed)	Mean difference	Std. Error difference	Interval of variation with a 95% confidence level	
									low	high
Basic reading comprehension score	assumptions of equal variances	0.548	0.462	0.777	67.0	0.440	1.683	2.166	-2.640	6.006
	Equal variances not assumed		6	0.776	65.5	0.441	1.683	2.170	-2.650	6.016

Table 2: Results of a two-way ANOVA test for pupils who were taught using an electronic storybook and a printed book (tests of between-subjects effects).

Source	Sum of squares (Type III)	df	Mean square	F	Sig
Source	273.476*	5	57.962	0.692	0.633
Corrected Model	435789.365	1	425689.275	5172.917	0.000
Intercept	58.776	2	38.378	0.345	0.708
Styles					
Model	68.143	1	67.143	0.802	0.372
Styles*Models	168.405	2	88.163	1.082	0.346
Error	5275.472	66	83.407		
Total	668761.020	72			
Corrected Total	6469.757	71			

*R squared = 0.052 (R squared adjusted = -0.023)

The analysis results using inference (Table 1) indicate no distinction between the reading comprehension of teaching students with an e-storybook and those acquainted with a printed storybook. According to the results of a two-way ANOVA test (Table 2), there is no correlation between e-book and print book learning models and learning styles. Based on the descriptive analysis results (Table 3), there is a slight increase in student achievement (Mean) with the e-storybook model compared to the print book model.

Table 3. Study results for students who were taught using an e-storybook and a print storybook, with descriptive statistics (group statistics)

	Learning model	N	Mean	Sd	Sd. Erorr mean
Basic Reading Comprehension achievement	E-storybook	36	82.77	8.437	1.426
	Print storybook	36	81.09	9.536	1.635

Differences in primary reading comprehension achievement among students Taught using an electronic storybook or a print storybook based on the Visual Learning Style.

Depending on an inferential analysis' findings, there was no significant distinction between the results of students studying basic reading comprehension through e-storybooks or print storybooks in terms of visual learning styles. However, descriptive statistics reveal differences in the average value of student achievement taught by e-storybook and print storybook implementation.

Table 4. Test results of independent samples of students taught by e-storybook versus print book based on their visual learning style (independent samples test).

		Levene's equality test for variances		T-test for equal variances						
		F	Sig	t	df	Sig (2-tailed)	Mean difference	Std. error difference	Interval of variation with a 95% confidence level	
									low	high
Basic reading comprehension score	assumptions of equal variances	2.241	0.149	1.373	22	0.183	5.543	4.036	-2.827	13.912
	Equal variances not assumed			1.436	21.821	0.165	5.543	3.860	-2.467	13.552

Table 5. Statistical description for the learning outcomes of teaching students using e-storybook and print book according to their visual learning style (group statistics).

	Learning model	N	Mean	Standard Deviation	Standard Erorr Mean
Basic Reading Comprehension Avhievement	E-storybook	14	83.14	10.676	2.853
	Print book	11	77.60	8.222	2.600

The findings (Tables 4 and 5) indicate that the achievement of students who learn using e-storybook are superior to those trained using print storybook. This is since e-storybooks can serve as a model to illustrate how spoken language functions and how vocabulary and grammar practice can be acquired naturally (Cameron, 2001). With the aid of audio and visual images, E-storybook creates a favourable environment for students to learn English in an informal, stimulating, meaningful, and enjoyable manner. For assessing students' comprehension of the story in the text, it is optimal to provide illustrations to those with a strong visual imagination. In electronic picture storybooks, visual aids facilitate information retention and mental representation. Students are allowed to read and study the prepared material. Students were then provided with an individual test, and the results of each student's work were compiled into their group. The mean values for each learning type were not statistically significant.

Basic reading comprehension varies Learning Results of Students Taught Using E-Storybook and Print Book in accordance with the Aural Learning Style

The findings of English language education students who learn using the e- storybook and print storybook learning models were not substantially different in terms of auditory learning preferences, according to the results of inferential analysis (Table 6). However, descriptive statistics (Table 7) reveal differences between the two learning models regarding the average value of student learning outcomes. According to the results, students taught using an electronic storybook had better learning outcomes than those taught using a print storybook.

Table 6. Independent samples test results for students taught by e-storybook and print storybook based on auditory learning style (independent samples test)

		Levene's equality test for variances		T-test for equal variances						
		F	Sig	t	df	Sig(2-tailed)	Mean difference	Std. error difference	Interval of variation with a 95% confidence level	
									low	high
Basic reading comprehension score	assumptions of equal variances	2.772	0.108	-0.598	25	-2.059	0.555	3.442	-0	5.030
	Equal variances not assumed			-0.680	24.97	-2.059	5.50-2.3	3.029	-2.467	4.180

Table 7. Electronic storybook vs print storybook descriptive statistics for auditory learners (group statistics).

	Learning media	N	Mean	Std. Deviation	Std. Error Mean
Basic Reading Comprehension Achievement	e-storybook	11	81.00	5.888	1.862
	Print story book	17	83.06	9.852	2.389

Differences in Basic Reading Comprehension levels of students taught using print and electronic storybooks based on kinesthetic learning styles

Inferential analysis revealed that (Table 8) the differences in basic reading comprehension scores between e-storybook and print storybook students are not statistically significant. Nonetheless, when viewed as descriptive statistics (Table 9), average student learning varied. The results indicate that the learning outcomes of students taught using an e-storybook are superior to those taught using a printed storybook. This is because e-storybooks can promote reading engagement, vocabulary growth, comprehension, and phonological awareness, allowing each student to perceive an improvement in reading comprehension. For most students involved in these studies, electronic texts provided a greater level of comprehension than print texts. Not all students, however, benefited from reading electronic texts. The test scores determine the degree to which each group's understanding of the material was successful.

Table 8. Test results from independent samples for students learn using e-storybook and print storybook based on kinaesthetic learning preferences (independent samples test).

		Levene's equality test for variances		T-test for equal variances						
		F	Sig	t	df	Sig (2-tailed)	Mean difference	Std. Error difference	Interval of variation with a 95% confidence level	
									low	high
Basic reading comprehension score	assumptions of equal variances	1.480	0.241	0.619	16	0.545	2.623	4.240	-6.365	11.611
	Equal variances not assumed			0.576	10.07	0.578	2.623	4.558	-7.523	12.769

Table 9. Study results for students taught using e-storybook and print and storybooks based on their kinaesthetic learning preferences (group statistics).

	Learning media	N	Mean	Std. Deviation	Std. Error Mean
Basic Reading Comprehension Achievement	e-storybook	12	82.71	5.888	1.862
	Print story book	7	81.09	9.852	2.389

Differences in Students' Basic Reading Comprehension Learning preferences depending on Visual, Auditory, and Kinaesthetic

According to the finding of inferential analysis (Table 10), there is no significant difference between visual, auditory, and kinesthetic learners in terms of basic reading comprehension. However, descriptive statistics (Table 11) reveal that There are differences in the typical student learning results for auditory, visual, and kinaesthetic learners. The results of the students' acoustic learning styles were superior to those of their visual and kinesthetic learning styles for basic reading comprehension.

Table 10: Testing the effects of one-way ANOVA on the learning outcomes for students with visual, auditory, and kinesthetic learning preferences

	Sum of square	df	Mean square	F	Sig
Between Group	48.026	2	23.513	0.289	0.744
Within Group	5468.732	69	84.133		
Total	5516,758	71			

Table 11. Descriptive statistics for student study achievement on the basis of auditory, visual, and kinesthetic learning styles.

	N	Mean	Std Deviation	Std. Error	95% credibility interval for the mean		Minimun	Maximum
					Low Bound	High		
Visual	25	80.37	9.875	2.045	77.82	84.02	68	95
Aural	28	82.03	85	1.642	78.92	85.78	69	95
Kinaesthetic	19	81.09	8	2.029	78.62	88.06	66	95
Total	72	81.16	8	1.080	79.79	86	67	95

CONCLUSION

Visual, auditory, and kinesthetic learning styles do not significantly influence the basic reading comprehension achievement of students taught via e-storybook or print storybooks. Statistics from descriptive data show the result of students' achievements with an auditory learning style for basic reading comprehension are superior to those of visual and kinesthetic learning styles. There are no significant

differences between basic reading comprehension students taught with an e-storybook and those taught with a print storybook regarding their learning achievement. So that each student's learning preferences can be accommodated, it is optimal to present specific topics as lectures. This would aid the lecturer while developing a learning model in tailored to the lecture and potentially upgrade the student's learning achievement. It is anticipated that, as a result of the findings of this study, every lecture will be able to encourage students to identify and utilize their most effective learning style.

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