Digital Comics: Integrating CALL in Enhancing Students' Reading Skill at the High School Level

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Article Info	Abstract
	Computer-Assisted Language Learning (CALL) is a learning method that uses computer technology in the language learning process. This includes the use of software, applications, and other digital resources to assist students in learning English. Digital comics are a form of comic presented in digital format, which can be accessed and read via electronic devices such as computers, tablets or smartphones. This research aims to assess the effectiveness of learning CALL with digital comics in improving English reading skills. This research involves a pre-test and post-test comparison between experimental and control groups using narrative text material. There were 60 students from class XI. A and XI. C SMA 2 Muhammadiyah Bandar Lampung in the academic year 2023/2024. The results showed a significant increase in the scores of the experimental group post-intervention, especially in the higher score range (84-100). The findings show that the CALL method with digital comics is an effective tool to improve English reading skill among high school students.
Artikel Info	Abstrak
	Computer-Assisted Language Learning (CALL) merupakan metode pembelajaran yang menggunakan teknologi komputer dalam proses pembelajaran bahasa. Hal ini mencakup penggunaan perangkat lunak, aplikasi, dan sumber daya digital lainnya untuk membantu siswa dalam belajar bahasa Inggris. Komik digital adalah suatu bentuk komik yang disajikan dalam format digital, yang dapat diakses dan dibaca melalui perangkat elektronik seperti komputer, tablet, atau smartphone. Penelitian ini bertujuan untuk menilai efektivitas pembelajaran CALL dengan komik digital dalam meningkatkan keterampilan membaca bahasa Inggris. Penelitian ini melibatkan perbandingan pre-test dan post-test antara kelompok eksperimen dan kontrol dengan menggunakan materi teks naratif. Siswa kelas XI berjumlah 60 orang. A dan XI. C SMA 2 Muhammadiyah Bandar Lampung tahun ajaran 2023/2024. Hasilnya menunjukkan peningkatan skor kelompok eksperimen pasca intervensi yang signifikan, terutama pada rentang skor yang lebih tinggi (84-100). Temuan menunjukkan bahwa metode CALL dengan komik digital merupakan alat yang efektif untuk meningkatkan keterampilan membaca bahasa Inggris di kalangan siswa sekolah menengah.

I. INTRODUCTION

Reading is an important component in the learning process, the ability to read is a basic thing that must be possessed because the ability to read can help students understand and receive information, making it easier for teaching and learning activities to be more successful. (Amumpuni, 2017) Through the reading process, students can identify topics, control ideas, main ideas, generic structures, linguistic characteristics and grammatical structures in addition to understanding the meaning of the entire content. Students' literacy levels can only increase by reading. Visual literacy is the ability to construct meaning from images, not a skill. This is a form of critical thinking that improves intellectual abilities. (Peña, 2009) Discusses students' critical thinking skills that can be developed through visual literacy. If students have not mastered reading skills, their potential for success in the learning context will be hampered from the start. (Sugiyono, 2013) Reading literacy still cannot be ignored in society.

It can be concluded that reading activities in society are quite difficult, there is a lack of self-interest so that reading is quite boring. One aspect that plays an important role in English subjects is reading ability. According to Kamah (2001:53), reading is an activity that enriches knowledge and also broadens horizons, it can shape character and attitudes, thereby leading to increased knowledge. The low interest in reading, especially in English subjects, is what causes the lack of interest in reading English. This is in line with the opinion of Muhibbin Syah

(2002: 166) who states that the low influence of students' reading abilities, namely poor interest in reading and students' poor reading learning habits.

This affects the reading ability of untrained students. Students' low interest in reading can be one of the factors causing students' low reading ability. Based on the data that I know, the level of students' reading interest is relatively low, which shows that students' reading ability is still relatively low. Therefore, researchers conducted research using digital comics as a learning medium and also CALL (Computer Assisted Language Learning) as a learning method to improve students' reading skills at the high school level. According to (Nanda & Azmy, 2020). Poor reading comprehension in the EFL context among secondary school students in Indonesia is a debilitating problem influenced by three important factors: lack of student motivation, low prior knowledge, and poor English vocabulary. Learning content can be presented in an interesting and visually appealing way by using digital comics as learning media and Computer Assisted Language Learning (CALL) which helps students understand and remember the material better.

Digital comics combine text, images, and occasional animation to help students visualize complex ideas and have a more enjoyable reading experience. According to Stephen D. Krashen (quoted from Schwarz, 2006) in The Power of Reading: Insight from the Research: "Educators also encourage the use of comics as an alternative, interesting way for students to examine linguistic structure, character development, and character development. With the help of various CALL apps and programs, students can practice reading according to their skill level, get instant feedback, and engage in independent learning. CALL encourages students' active participation in the reading learning process through a series of interactive activities such as vocabulary practice, interactive reading, and learning games. As stated by (HABIB et al., 2019) Students who receive computer-assisted instruction have better vocabulary memory and reading comprehension skills. Comics that are available in digital format that can be viewed and read on computers, tablets and smartphones are called digital comics. Digital comics, unlike traditional print comics, are usually delivered as digital image files or unique software that allows users to read comics interactively.

Traditional printed comics usually consist of sheets of paper. Digital comics can include a range of additional features including animation, sound, and interactions that are not included in print comics. According to (McCloud, 1993). Comics are images arranged sequentially on purpose, intended to convey information or produce an aesthetic response from the reader. Computer-Assisted Language Learning (CALL) is a learning method that uses computer technology in the language learning process. This includes the use of software, applications and other digital resources to assist students in learning English. According to (Benyo, 2020) New methods and instruments that can help students become more proficient in language are language learning with the help of computers. The use of (CALL) in language teaching has proven to be effective in rapidly developing ESL learners' reading skills. (Hubbard & Levy, 2006: 9) Word processing, email, chat, and audio-video conferencing software are all included in CALL.

In fact, instructors at CALL provide assignment and activity creation, website design, grading, as well as class management, which promotes efficient teaching. As a result, as students get better at English, their academic results in other subjects also improve. The integration of digital comics with CALL fosters an engaging and dynamic learning environment for students. Reading is a process carried out by the reader to be interpreted as a form of cartoon that reveals characters and carries out a story in a close sequence with pictures and is designed to provide entertainment to the reader. Digital comics are digital media that can convey information effectively and arouse students' interest in English. Therefore, it is hoped that the findings of this research can help English teachers and educational institutions create more interesting and significant teaching methods in teaching and learning activities.

For the teaching and learning process to be effective, reading is a fundamental skill that students need to engage with educational material and understand knowledge. In today's increasingly digital environment, gaining access to the knowledge needed for academic success is critical. Digital comics can provide learning media that can be visually stimulating, and CALL offers adaptive interactive materials that support independent learning and student under-standing. In addition, new channels for interactive learning experiences opened up with the introduction of digital comics and CALL in

language training, which improved students' academic performance in general. Through various interactive activities such as vocabulary practice, interactive reading, and learning games, CALL encourages students' active involvement in the reading learning process. The combination of digital comics and CALL offers a promising approach to improve students' reading skills and foster their interest in English language learning. By utilizing innovative technology and inte-ractive pedagogy, educators can create engaging and effective learning environments that empower students to succeed in their academic endeavors.

Table 1. Distribution Pre-Test Experimental Class

No	Interval	Frequency	%	Category
1.	85-100	1	3.33%	Very Good
2.	75-84	1	3.33%	Good
3.	65-74	10	33.33%	Fair
4.	55-65	18	60.00%	Bad
Total		= 100		100.00

Overall, it was found that only 2 students gave correct answers in total (40) or 75%. total students who can answer questions (30). On the other hand, students who get a score of "Medium" (answering 26-29 questions) and "Poor" (answering 0-22 questions), meaning they are only able to answer eleven to 15 questions. Therefore, there is a lack of achievement at higher scores, as can be seen from the lower number of cases in the 85-100 and 75-84 ranges.

Table 2. Distribution Post-Test Experimental Class

No	Interval	Frequency	%	Category
1.	85-100	6	20.00%	Very Good
2.	75-84	16	53.33%	Good
3.	65-74	6	20.00%	Fair
4.	55-65	2	6.67%	Bad
Total		= 100		100.00

Range 85-100: There was 6 students who scored between 85 and 100, accounting for 20.00% of the total students tested.Interval 75-84: 16 students scored between 75 and 84, accounting for 53.00% of the total students tested. Interval 65-74: 6 students scored between 65 and 74, accounting for 20.00% of the total students taking the test. Range 55-65: there were 2 students who had scores between 55 and 65, accounting for 6.67% of the total students tested. Therefore, it was concluded that there was an increase in the number of students who obtained high scores (85-100) after using the CALL method and digital comics.Most students obtained good scores (75-84) which indicates a

significant increase in general ability. In the lowest score interval (55-65) there was an increase in the number of students who obtained scores, but still needed further attention. Based on the data above, it can be concluded that the use of the CALL method and digital comics as learning media can provide positive significance in improving students' English language skills.

Table 3. Distribution Pre-Test Control Class

No	Interval	Frequency	%	Category
1.	85-100	1	3.33%	Very Good
2.	75-84	0	0.00%	Good
3.	65-74	14	46.67%	Fair
4.	55-65	15	50.00%	Bad
Total		= 100		100.00

From the data in the table above, it can be seen that the pre-test was carried out before the teaching process of applying the group class discussion method with the same material as the experimental class, namely narrative text, Range 85-100: There was 1 student who got a score between 85 to 100, contributing 3 .33% of the total students tested. interval 75-84: There are no students who have a score between 75 and 84. interval 65-74: 14 students get a score between 65 and 74, there are 33.33% of the total students tested. interval 55-65: 15 students who got a score between 55 and 65, there are 60.00% of the total students tested. Most students obtained relatively low scores (55-65) before carrying out group class discussions, namely 60.00% of the total students who took part in testing activities. There were several students (33.33%) who obtained scores in the range of 65-74, indicating variations in ability. No students achieved high scores (85-100) before carrying out group class discussions. This shows that before the group class discussion method was applied there were variations in students' ability to understand narrative text material. Average student scores tend to be low, with most students falling in the 55-65 score range.

Table 4. Distribution Post-Test Control Class

No	Interval	Frequency	%	Category
1.	85-100	3	10.00%	Very Good
2.	75-84	20	66.67%	Good
3.	65-74	6	20.00%	Fair
4.	55-65	1	3.33%	Bad
Total		= 100		100.00

From the table data above, it can be seen that the post-test was carried out after the treatment process of applying the discussion group method with the same material as the experimental class, namely narrative text, Range 100: There were 3 students who got a score of 100, contributing 10.00% of the total students tested. Range 84: Of

the tested, 20 students received a score of 84, or 66.67% of the total. Range 74: Six students, or 20.00% of the total, received a score in this range. students tested. Range 55: 1 students got a score of 55, accounting for 3.33% of the total students tested. There was an increase in the number of students who got high scores (84 and 100) after using the Discussion Group Class method. This demonstrates how this approach can aid students in developing a deeper comprehension of narrative literature. Following the implementation of the Discussion Group Class approach, the majority of students received ratings of 84 and 74, showing an improvement in their learning outcomes with regard to English language ability. Although there were still some students who obtained low scores (55), the number was quite small, indicating an improvement in understanding the material.

II. METODE PENELITIAN

In this study, researchers used a quasi-experimental design. According to, (Hardani et al., 2020), experimental design can be interpreted as a research method used to look for the effect of certain treatments under controlled conditions. In addition, experimental research was carried out on variables for which the data did not yet exist, so it was necessary to manipulate the process by giving certain treatments to research subjects which were then observed/measured for their impact (future data). Meanwhile, the Quasi-experimental design is similar to the randomized experimental design in that it involves modification of the independent variables, and differs in that the subjects are not randomly assigned to treatment groups. The researcher must be keenly aware of the vulnerability to internal and external validity because quasi-experimental designs do not offer complete control. They also have to consider this threat when interpreting the results written by (Donald, Lucy, Chris, & Asghar, 2006). However, the researcher applied a quasi-experimental design with a nonrandomized or nonequivalent pre-test and post-test. The research subjects consisted of two groups, one group was an experimental group that received treatment using digital comics as a learning medium and the other group was a control group that received traditional methods. Meanwhile, the researcher decided to use a quasi-experimental design because it was relevant to the research objective, namely to find out the effectiveness of teaching reading ability using computer-assisted learning methods and digital comics as the medium in the tenth grade of SMA MUHAMMADIYAH 2 BANDAR LAMPUNG Bandar Lampung.

III. RESULT AND DISCUSSION
A. Result

Figure 5. Descriptive Statistical

	N	Minimum	Maximum	Mean		Std. Deviation
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic
Pre Test Experiment	30	30	85	56.83	2.097	11.483
Post Test Experiment	30	50	90	75.33	1.589	8.703
Pre Test Control	30	30	85	57.50	2.127	11.652
Post Test Control	30	55	95	75.00	1.377	7.543
Valid N (listwise)	30					

From the table above, there is a comparison between the pre-test and post-test results from the experimental class and the control class. From the pre-test results, the two groups (experimental and control) had quite different score ranges. The average pre-test score for the experimental class was lower (56.83) than the control class (57.50). However, after following the intervention or treatment, namely the post-test, the experimental class showed significant improvement. The control group received an average score of 75.00 on the post-test, whereas the experimental class received an average score of 75.33. The difference in average pre- and post-test scores between the experimental and control classes shows how successfully the intervention improved students' understanding or competency in the subject. In comparison to the control class, the findings indicate that the experimental class's therapy significantly improved the students' comprehension or proficiency in the subject matter.

Table 6. Reliability Test Pre Test

Cronbach's Alpha	N of Items
0.737	41

According to the table above, the Cronbach's Alpha value is 0.737. This shows that the test has a fairly good level of reliability. An Alpha grade that is close to 1 indicates that a test has a high degree of consistency in measuring the same variable. Here, the reliability of the exam is sufficiently good to be valuable for research on English teaching. Given that the test includes a total of

41 items and a Cronbach's Alpha of 0.737, it can be concluded that its reliability is sufficient for use in English education research. This indicates that the test can reliably measure the intended variable consistently

Table 7. Reliability Test Post Test

Cronbach's Alpha	N of Items
0.739	41

According to the table above, the Cronbach's Alpha value is 0.739. This shows that the test has a fairly good level of reliability. With an Alpha value close to 1, this indicates that the test has a high level of consistency in measuring the same variable. In this case, the test has a sufficient level of reliability for use in research in the field of English education. Based on the Cronbach's Alpha results of 0.739 with a total of 41 items, it can be said that the test has an adequate level of reliability for use in research in the field of English education. This indicates that the test can reliably measure the intended variable consistently.

Table 8. Normality Test

Pre Test Experiment	Kolmogorov-Smirnov			Shapiro-Wilk		
Pre Test Control	Statistic	df	Sig.	Statistic	df	Sig.
	0.306	5	0.141	0.827	5	0.133
	0.280	2				
	0.212	6	.200	0.911	6	0.441
	0.175	6	.200	0.974	6	0.918
	0.192	4		0.971	4	0.850
	0.299	4		0.895	4	0.408

According to the table above, the group with a significance value (Sig.) of 0.133 indicates that the data is normally distributed because the Sig. greater than the significance level generally used (usually 0.05). The group with a significance value (Sig.) of 0.441 also shows that the data is normally distributed because the Sig. greater than the significance level generally used. Thus, overall, the data in the Pre Test Experiment tends to be normally distributed based on the results of the normality test that has been carried out.

Table 9. Homogenity Test

Student learning outcomes		Levene Statistic	df1	df2	Sig.
	Based on Mean	0.783	1	58	0.380
	Based on Median	0.615	1	58	0.436
	Based on Median and with adjusted df	0.615	1	57.716	0.436
	Based on trimmed mean	1.079	1	58	0.303

Based on mean, median, median with adjusted df, and trimmed mean, the measurement methods' Significant Value (Sig.) is greater than 0.05, as shown in the data table

above (0.380, 0.436, 0.436, and 0.303). As a result, the homogeneity test's overall findings indicate that the data are homogeneously distributed, indicating that there is no discernible variation in variance between the groups.

Table 10. Independent T-Test

		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Student learning outcomes	Equal variances assumed	0.783	0.380	0.159	58	0.875	0.333	2.103	-3.876	4.542
	Equal variances not assumed			0.159	56.852	0.875	0.333	2.103	-3.878	4.544

Based on the results of the independent t-test, with the assumption of the same variations (equal variances assumed) and without this assumption (equal variances not assumed), the t-statistic value and p-value obtained were 0.159 and 0.875, which shows that there is no significant difference in impact between the experimental class and the control class on student learning outcomes. when the experimental class and control class get the same learning results, it can be concluded that the learning methods applied to both groups are equally effective.

B. Discussion

The statistics and justification above result in the conclusion that students' reading ability and enthusiasm for reading in English can be improved with the CALL (Computer-Assisted Language Learning) learning technique which utilizes digital comic learning materials. Students' reading skills increased significantly after using digital comics to implement CALL learning techniques. Isisag (2012). based on the research conducted it produces certain information that educators may utilize by incorporating the internet and computers into their learning to empower students to interact with speakers of the target language as well as those who are not native speakers.

The average score of students who took part in the treatment increased drastically compared to before, this can be seen from the results before and after the test. This shows how the CALL learning approach which utilizes digital comic learning materials can help students become more proficient in the subject matter being taught. The pre and post test results of the experimental class and control class were compared, and the results showed a significant increase in learning

outcomes in the experimental class. This shows that compared to the method used in the control class, the CALL learning method with digital comics is more effective in improving student learning outcomes. Based on the results of observations of questionnaire answers, which show the level of student confidence and proficiency in reading English texts, it also reveals the level of student interest and involvement in reading. although not explicitly measured in the data.

A fairly high score on the questionnaire indicates a relatively high interest in reading English. CALL learning techniques that use digital comics can be the best way to improve students' reading skills and enthusiasm for reading in English, according to research findings. (Surya, A., Poerwanti, J.I.S., & Sriyanto, M.I. (2020) That comic books can function as a useful learning tool to increase students' reading motivation. The results of therapy show this. Learning goes smoothly, and comics can inspire students when they taught and learned Comic books are a type of media that can be used easily and effectively in educational activities to help children learn (Cimermanová, 2015) Revealing that the use of comics creates developments in visual literacy.

The research results showed that after using digital comic learning materials to implement the CALL learning approach, students' English language skills increased. Comparison of the pre-test and post-test results of the experimental class with the control class shows that the experimental class showed a significant increase in scores compared to the control class. The average post-test score for the experimental class was higher than the control class, this shows the effectiveness of the treatment in increasing students' understanding of the material that has been provided using the CALL method and digital comics as learning media. Apart from that, reliability analysis shows that the test used in the research has a fairly high level of reliability, with a Cronbach's Alpha value which shows consistency in measuring the variable in question. In addition, the results of the normality test show that the data tends to be normally distributed, thereby increasing the validity of the findings. Overall, the research conclusions show that improving students' English language proficiency can be done through CALL learning techniques that

utilize digital comic learning materials. Students' cognitive abilities and overall learning outcomes improved significantly as a result of this intervention, demonstrating the potential for creative teaching strategies to enhance pedagogical approaches and thereby provide a positive impact.

IV. CONCLUSION AND SUGGESTION

A. Conclusion

The CALL (Computer-Assisted Language Learning) learning approach using digital comic learning media has improved students' reading abilities and interest in reading in English, according to the data results and reasons that have been mentioned. The pre-test and post-test findings, which demonstrated a rise in students' average scores after treatment, demonstrated that the adoption of the CALL learning technique with digital comics significantly increased the students' reading ability. Therefore, it can be said that the CALL learning method—which makes use of digital comics—is a successful strategy for raising students' reading comprehension and enthusiasm for English. (Harianja & Damanik, 2022) In addition to enhancing student learning results, this approach encourages equity, consistency in performance, and piques students' enthusiasm in reading. As a result, this approach is suggested as a useful learning technique for English language instruction in the classroom.

B. Suggestion

The author's suggestion is that teachers and other researchers can pay more attention to students' reading abilities. To increase attention to the reading sector, teachers can create an interesting reading environment by providing a reading corner full of various interesting books for students. Reading should be integrated in all subjects, especially British English reading, using various materials such as magazine articles, newspapers, blogs, comics and multimedia. Holding shared reading sessions and group discussions will help students understand texts more deeply and develop critical thinking skills. With these strategies, teachers can increase students' reading interest and ability, which has a positive impact on overall academic achievement.

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