



The Effectiveness of the Contextual Teaching and Learning Approach Assisted by Technology Media in Learning to Write

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Abstract. Implementation of the CTL (Contextual Teaching and Learning) approach assisted by technology media in learning to write texts for class VIII students of SMP Negeri 17 Kendari, Southeast Sulawesi, Indonesia.

This study aims to examine how the implementation of CTL assisted by technology media can improve students' understanding and skills in learning to write texts. The results of the study indicate that the CTL approach assisted by technology media is effective in significantly improving students' understanding. Based on Paired Samples Statistics data, the results show a significant difference between the average values of the Pre-Test and Post-Test. The average Pre-Test was recorded at 47.57 with a standard deviation of 14.588, while the average Post-Test increased to 81.23 with a standard deviation of 8.897. It can be concluded that student understanding is influenced by the application of methods and the use of technology in learning. Students' enthusiasm for learning material related to the contextual environment in which they are located is greatly influenced. Students become enthusiastic and motivated to learn and understand the subject matter more deeply.

Keywords: CTL Approach, Technology Media, Writing Learning

INTRODUCTION

The importance of writing skills in education and everyday life is undeniable. Writing is not simply the activity of arranging words into sentences, but rather a complex process that requires the ability to convey ideas, information, and thoughts in a structured and meaningful manner. However, writing instruction in the classroom often feels rigid, theoretical, and disconnected from students' realities. Therefore, to overcome this challenge, a learning approach is needed that can bridge theory and practice, and make the learning process more relevant and engaging. One appropriate approach is the Contextual Teaching and Learning (CTL) approach. Extensive research on the CTL approach has been conducted, such as by Tari¹, who explains that CTL is a form of learning approach that emphasizes the process of full student involvement in order to discover the material being studied and relate it to real-life situations. ²explains that training that connects theory and practice in real contexts can increase teachers' professional engagement in educational innovation. ³conveying CTL is contextual learning that helps students think more deeply by connecting lessons in school with what happens in the real world. ⁴explains that contextual learning can empower students to be active in the learning process by building their own knowledge. ⁵Contextual provides causal evidence for our theory of how contextual understanding of differences provides benefits. ^{6,7}explains the fact that the game proposed in the study offers language development functions and context to help students better understand the use of grammar.

Indonesian has four basic skills, namely listening, speaking, reading, and writing. Several studies on writing skills have been conducted. It explains that of the four language skills, writing is often considered the most difficult to master. ⁹(2019) concluded that writing skills require scientific reasoning and must comply with applicable rules; therefore, writing skills are considered the most difficult language skills. ¹⁰Writeis a skill that requires a long learning process, with a strong commitment to continue practicing, a person can develop their potential in writing. Research(2019)¹¹stated that the integration of technology in Indonesian language subjects can be done by using a framework that places language as the primary goal of learning. In this case, technology plays a role as an approach or tool used to achieve the language learning goals. Furthermore, research¹²(2021)explains that utilizing technology can facilitate the learning process; in this case, learning Indonesian language subjects by integrating science and technology concepts will help teachers and students improve learning outcomes and the quality of learning.

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Extensive research has been conducted on the use of technological media. In this digital era, technology and learning are increasingly closely linked and mutually influence each other. Technology provides a variety of innovative platforms and tools to facilitate access to writing skills learning materials in Indonesian language subjects, from online learning resources and interactive applications to translation software. Conversely, mastering good writing skills in Indonesian language subjects is key to utilizing technology effectively. The synergy between technology and writing skills opens up new opportunities in Indonesian language learning, while also demanding adaptive language skills in the digital age.¹³The use of technological media can arouse new interests and desires in students, increase motivation, and provide a positive psychological impact on the learning process.¹⁴(2020) Technology provides immersive experiences, allowing students to “feel” various aspects of culture and traditions directly, even though they are far from the location¹⁵(2020). Technological developments have brought significant changes to the world of education, especially for middle and high school students. While in the past, teachers viewed students as passive recipients, technology now opens up a variety of new learning methods that help them absorb information more effectively¹⁶(Dicky Agus Purnama & Lubis, 2023). .¹⁷Technology integration has expanded the choice of learning methods and changed the way students absorb information (Katsigiannakis & Karagiannidis, 2017; Yusri et al., 2021).

2. LITERATURE REVIEW

A. CTL APPROACH

CTL emphasizes the importance of students learning through direct experience and connecting subject matter to their life contexts. Learning is no longer focused on memorization, but rather on in-depth understanding that is relevant to students' real-world situations. Several studies explain that there are seven components in the CTL system, namely:¹⁸(Johnson 2002), Trianto (2011), Junianto and Wutsqa(2019),¹⁹argues that the seven components of CTL are; (1) constructivism; (2) inquiry; (3) questioning; (4) learning community; (5) modeling; (6) reflection; (7) authentic assessment. Yuwandra explains that based on the analysis of the results and discussion of the research, it can be concluded that learning that adopts the CTL approach has met the criteria of being valid, practical, and effective in its application. The implementation of the CTL learning strategy has been proven to be able to encourage increased student activity in the learning process²⁰

This article will explain the effectiveness of implementing the CTL approach in teaching writing texts. We will see how the seven main components of CTL significantly improve students' writing skills, enabling them to compose not only grammatically correct texts, but also meaningful and functional ones. Through contextual learning, students are actively involved and able to have meaningful experiences through real objects obtained from their own environment. Teachers are very creative in presenting all components of CTL into learning activities, each component closely related to the competency to be achieved¹.

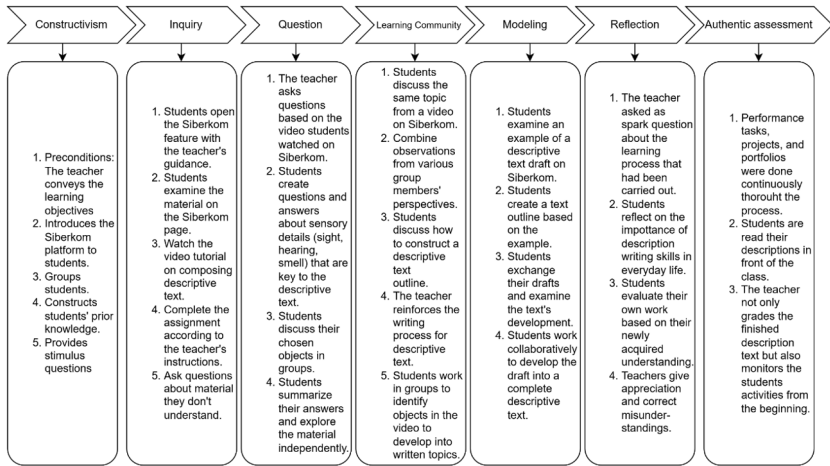


Figure 1. Components of the application of the CTL approach in learning text writing skills

B. TECHNOLOGY MEDIA

Hasani (2021)¹²explains that utilizing technology can facilitate the learning process. In this case, learning the Indonesian language by integrating science and technology concepts will help teachers and students improve learning outcomes and the quality of learning. Brown (2020)²¹explains that video is a visually rich medium capable of conveying large amounts of information. Audiovisual learning media serve as an effective message transmitter because they combine images and sound, making the material more tangible and easier to understand. Dugartsyrenova (2020)²²stated that the reach of technology will help students improve their writing skills. The use of audiovisual materials, generally lasting 7 to 10 minutes, can stimulate activity and stimulate the development of students' abilities to reconstruct prior knowledge with the knowledge gained during the learning process.(Pavlovich & Marina, 2015).²³ Research (2020)²⁴This study shows that the use of audiovisual media significantly influences the learning outcomes of fifth-grade elementary school students in Indonesia. The use of this media has been shown to have a very positive impact on learning.

Teachers need media and learning resources that are appropriate to the environment's characteristics. According to the Indonesian dictionary, media can be defined as a means of communication and information, including radio, television, books, newspapers, magazines, and so on. ²⁵One of the factors causing learning failure is the mismatch between the learning model used and the learning objectives. Writing skills instruction in Indonesian language subjects in junior high schools generally relies on examples without interactive media, thus lacking student interest and making it difficult for them to understand and implement the learning. Therefore, developing learning models is essential to address these issues and improve the quality of Indonesian language learning, particularly in writing descriptive texts for eighth-grade students.

3. METHOD

This study applies a mixed method to analyze the effectiveness of the CTL approach in teaching writing texts assisted by technology media at the junior high school level, specifically grade VIII. The aim is to evaluate the effectiveness and collect qualitative data from students and teachers through observation and questionnaires. To measure the improvement in students' understanding of the knowledge and skills aspects, quantitative data were collected using multiple-choice tests and writing practice conducted in two stages: a pre-test before the implementation of the approach and use of media, and a post-test afterward. Data from both tests will be processed to calculate the N-Gain score. This score, which ranges from -100% to 100% with a "moderate" category at the range of 0.30 < g < 0.70, is used to measure how effective the learning media is in improving understanding. A positive N-Gain score indicates an increase, while a negative score indicates a

decrease.

To statistically verify the effectiveness of the CTL approach and media, a paired t-test was conducted on the pre-test and post-test data. Data analysis was performed by comparing the pre-test and post-test data using the paired sample t-test formula ²⁶(Arikunto, 2013). If the t-test results produce a significance value (p-value) smaller than 0.05, this indicates a significant difference between the scores before and after the intervention. This confirms that the CTL approach to learning to write texts assisted by technology media has a positive and effective impact on improving students' understanding and writing skills.

TABLE 1. Interpretation categories of N-gain effectiveness.

Percentage (%)	Interpretation
<40	Ineffective
40-55	Less Effective
56-75	Quite Effective
>76	Effective

TABLE 2. Distribution of N-gain scores.

Score	Category
$g > 0.7$	Tall
$0.3 \leq g \leq 0.7$	Currently
$g < 0.3$	Low

In this study, we collected data in several ways to evaluate the implementation of the CTL approach in technology-assisted writing learning. First, we directly observed the classroom to determine the level of student engagement and response in learning. Furthermore, we conducted interviews with students and teachers to obtain input on effectiveness and emerging challenges. All data from the observations and interviews were analyzed qualitatively to identify student and teacher experiences, as well as obstacles encountered during the implementation of technology-assisted CTL in the classroom. The results of this analysis serve as the basis for evaluating the effectiveness of the technology-assisted CTL approach in improving students' understanding and skills in learning to write texts. Based on these findings, this article presents recommendations for the development and implementation of the technology-assisted CTL approach in the school curriculum, as well as suggestions for overcoming various challenges that emerged during the study.

4. PROCESS AND RESULTS

The results of this study indicate that the CTL approach assisted by technology media in learning text writing skills is very effective for eighth-grade junior high school students. The important findings of this study are as follows.

Testing students' understanding of the knowledge aspect through multiple-choice questions and the skills aspect through writing texts is important because it can measure students' understanding of the material in depth.

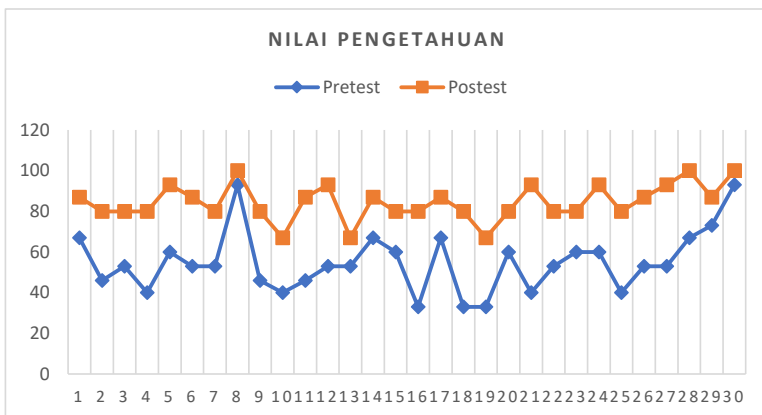


Figure 2. Comparison of knowledge values before and after use The CTL approach assisted by technology media

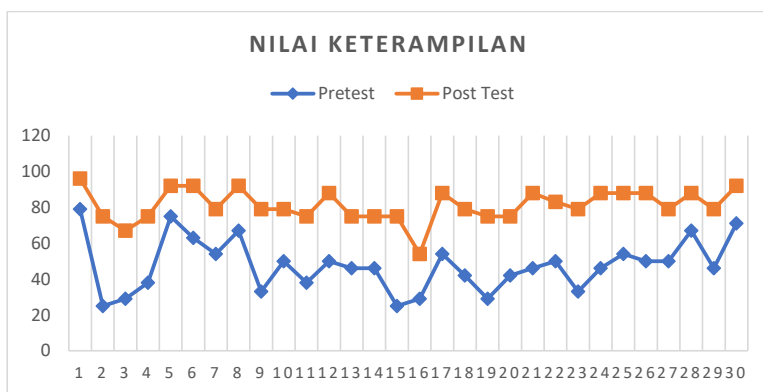


Figure 3. Comparison of writing skill scores before and after Use of the CTL approach assisted by technology media

Based on the data presented in Figures 1 and 2, it is clear that students' understanding of the knowledge and skills aspects increased before and after the implementation of the CTL approach assisted by technology media. This is in line with students' responses in the questionnaire, which indicated they felt more curious and motivated to learn. Furthermore, the use of technology media provides flexibility for students because it allows them to learn anytime and anywhere.

TABLE 3. N-gain test results

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Standard Deviation
NGain_Score	30	0.35	0.81	0.6545	0.10161
NGain_Percent	30	35.21	80.95	65,4533	10.16135
Valid N (listwise)	30				

Based on the descriptive statistics table, there were 30 valid data points analyzed, as reflected in the "Valid N (listwise)" value. In the N-Gain Score variable, the minimum value was recorded at 0.35, indicating that there were students with moderate learning improvements, while the maximum value reached 0.81, indicating that students with the greatest improvements reached 81% of the maximum potential improvement. The average N-Gain Score was 0.6545, which means the average improvement was at 65.45% of the maximum potential improvement. The standard deviation of 0.10161 indicates that the data had relatively small variations and was centered around the average value. These data indicate that the use of the CTL approach in learning to write texts assisted by technology media was quite effective, with an average improvement reaching around 65.45%. The moderate data range, from 35.21% to 80.95%, indicates that all students experienced fairly consistent improvements.

TABLE 4. Description of Writing Skills Data Paired t-test results

		Paired Samples Statistics			
		Mean	N	Standard Deviation	Std. Error Mean
Pair 1	Pre-Test	47.57	30	14,588	2,663
	Post Test	81.23	30	8,897	1,624

Based on Paired Samples Statistics data, the results show a significant difference between the average values of the Pre-Test and Post-Test. The average Pre-Test was recorded at 47.57 with a standard deviation of 14.588, while the average Post-Test increased to 81.23 with a standard deviation of 8.897. This indicates that there was an average increase of 33.66 points after the intervention or treatment was carried out. With a significant increase in the average Post-Test value, it can be concluded that the intervention or CTL approach in learning text writing skills assisted by technology media that was applied had a fairly strong positive impact on student learning outcomes.

TABLE 5. Paired t-test results

		Paired Samples Test							
		Paired Differences							
		Mean	Standard Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
Pair	Pre-Test - Post-Test				Lower	Upper			
1		-33,667	9,155	1,671	-37,085	-30,248	-20,142	29	0,000

The results of the paired t-test showed a very significant difference between the Pre-Test and Post-Test scores. The average difference between the two tests was -33.667 (indicating an increase of 33.667 points), which indicates a very substantial increase in learning outcomes in text writing skills after the use of the CTL approach assisted by technology media. The standard deviation of 9.155 indicates that the variation in the difference is not too large, while the standard error of the mean of 1.671 indicates that the average estimate of the difference is quite accurate. Thus, it can be concluded that the treatment or intervention applied in this study significantly and substantially improved student learning outcomes. The findings of this study are in line with various previous studies, which show that technology has a significant role in improving various cognitive, affective, and social skills of students. The application of technology can create a more effective learning environment, reduce the cognitive load that students often experience, and build a positive attitude towards the learning process.

5. CONCLUSION

The CTL learning model, supported by technology, has proven highly effective for eighth-grade junior high school students. Based on the N-Gain comprehension test, this model significantly improved students' understanding and skills. This improvement was demonstrated by post-test results that were significantly higher than pre-test scores, with an average increase of approximately 65.45%. This figure confirms the success of the learning media in achieving its objectives and exceeding the established benchmark values.

The use of a CTL approach supported by technology media offers a more contextual and in-depth learning experience. Its positive impacts include improved understanding and writing skills, which can strengthen students' empathy and appreciation for their everyday environment. As an educational medium, technology supports innovative and adaptive learning methods in the digital age. However, its success depends heavily on the technical readiness and supporting facilities within the student's environment, both at school and in the community. Therefore, schools must plan carefully to ensure the technical aspects and infrastructure necessary for the effective integration of technology media into the curriculum.

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