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Micro Learning for Undergraduate Students' Writing Ability: An Effect on Writing English Text

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Abstract
One of the factors that generate lack of students' writing competence is the teaching methods used by the lecturer which is less desirable by the students. Micro learning comes as one of the alternatives to deliver the knowledge to the students which became the focus of this study on seeing the significance of the strategy in improving students' ability to write English text. This is an experimental research involving 64 participants which was done in *Universitas Muhammadiyah Sumatera Barat* (*UM Sumbar*). The population of this study consisted of 124 students distributed across 4 classes. The sample selection was done using cluster random sampling, which resulted in one class being assigned as the experimental group and another class as the control group The data was gained by determining whether students have improved their writing scores (through writing rubric) by implementing micro teaching through pre-test and post-test. The researchers look for

the statistical t-value with a significance level of <0.05. Furthermore, the researchers conduct further analysis through descriptive analysis using SPSS 24. The results of this research were obtained through a t-test with a significance level of 5% (0.05), yielding an observed t-value of 2.975, while the critical t-value was 2.306. These findings indicate that students' achievement in writing texts improved. Therefore, it can be concluded that micro-learning is an effective instructional method for enhancing the writing skills of English Education students at *Universitas Muhammadiyah Sumatera Barat*.

Keywords: English text, students' ability, writing, micro learning

INTRODUCTION

It is believed that one of the language skills that language learners must possess is the ability to write. This writing skill is not only needed for academic purposes but also for various other purposes where this ability will be utilized. The importance of mastering language skills is supported by a curriculum design that aligns with learners' needs, enabling them to not only write scholarly articles but also prepare for their professional future. Therefore, this ability can be a determining factor for their career success, making writing skills a crucial competence for students, particularly in the digital era we are currently in. In brief, writing skill is required skill for students which are not only for academic purpose, but for their professional career as well, particularly at present time.

Good writing skills can help avoid communication that is ineffective and incoherent. Accordingly, it can be said that writing is a highly demanding skill to communicate thoughts, ideas, messages, even argumentation (Abbas, 2015). Therefore, to write, the students need complex knowledge not only in grammar, vocabulary and metacognitive competencies as well (Amalia et al., 2021); (Toba et al., 2019); (Sianturi et al., 2020). Among the four language skills, the most challenging to master and teach is the skill of writing (Klimova, 2015). This is due to the fact that writing is as a multifaceted process and the absence of mutual interaction with audience and the competence in rhetorical matters (Celce-Murcia, 2001). In short, in spite of its complex requirement to be mastered, writing skill is a paramount importance for English students to master enabling them not only for their academic goals but their professional future as well.

Accordingly, due to the complexity of its aspects to be mastered, writing skills often pose challenges for students, particularly problems in conveying their ideas through writing texts (Kemala et al., 2020); (Singaravelu et al., 2020). The problems can be in the aspects, such as vocabulary, grammar, the organization, punctuation, spelling, and other aspects that mostly become constraint and challenge for them to write correctly and effectively as asserted by Sartika et al. (2022) that the most difficult skill to master for students is writing. Writing difficulties of students can be noticed from several studies conducted as in a study on writing ability of students to write English text. It was found that the students of English education program academic year of 2011/2012 at Bengkulu University, found writing skill was difficult. The students' problems in writing were in building sentences.

Furthermore, another research study also found that writing is a challenging language skill, as revealed in a study conducted by Nenotek et al. (2022)This research discovered that students face difficulties in all four aspects of academic writing, namely content, writing structure or organization, discourse, and mechanics of writing. The

highest percentage of difficulty, reaching 97%, was observed in students' proficiency in thesis statement formulation. Additionally, students struggled with generating ideas related to the given topic, developing their ideas or concepts into written form, expressing cause-and-effect relationships or making comparisons, as well as writing background information, main sentences, and literature references. Additionally, the previous studies were also in similar line with a conducted study by Sartika et al. (2022) that the students experienced problems in recount text shown from total 74 students, 12 (54.54%) students faced difficulties in content, 15 (68.18%) students faced problems in organization of writing, 12 (54.54%) students indicated for having obstacles in writing the vocabularies, 19 (86.37%) were difficult in writing grammatically, and 16 (72.72%) students experienced problems in writing technique. Shortly, despite writing skill contents various aspects, a learner needs to put into his or her consideration to possess them to be able to write well.

In addition, there are also several difficulties faced by students in their writing ability from their social aspect, such as their perception of English as a foreign language or it can also be caused by their slow development in learning the language, or even a lack of sufficient motivation for them to learn the language (Klimova, 2014). However, regardless, writing skills are rarely taught, thus affecting their achievement in this area, which is caused by several factors such as the difficulties encountered by teachers when teaching writing skills themselves. Additionally, it can also be due to the fact that writing skills are not specifically assessed in the final semester evaluation, and teachers tend to spend more time teaching students to understand the components or structure of a piece of writing rather than its direct application. Lastly, it can also be attributed to the time required to teach writing skills, especially in providing feedback on student work or writing outcomes (Harlena et al., 2019). In short, the constraints faced by both teachers and students often become significant barriers in helping students to have good writing skills.

Moreover, based on the preliminary research held at Universitas Muhammadiyah Sumatera Barat (UM Sumbar) Indonesia in February - April 2023, it was found that undergraduate students have difficulties in writing English text. This fact was caused by the system of traditional learning applied that demotivated the students to learn effectively. The students' often got stuck with learning process since it did not encourage them to think creatively and freely so that the students did not get the knowledge by keeping it memorable as asserted by Hug & Friesen (2007) that traditional learning makes students easy to forget about the lesson. Students, as the center and object of the learning process, are the main catalyst for the transition from one learning approach to another. Advances in technology, the development of e-learning platforms, and the high demand for more flexible and accessible learning experiences have significantly contributed to the gradual but definite changes in the learning approach. In other words, students' difficulties in writing skill reflects an adaptation to students' desires and needs which ultimately leads to the evolution of the learning approach.

This learning method is a strategy carried out in a short period of time, where the material given to students is in the form of short, independent segments that can be repeated by students either individually or together, according to their needs and preferences, anytime and anywhere. Fitria (2022) states that micro learning is a well-known teaching method that provides students with learning experiences in the form of sections, and this is highly recognized in e-learning. This aligns with the statement

emphasized by Giurgiu (2017) that micro learning is well-known in the internet-based learning industry and digital media. Therefore, this type of learning enables students to better understand the material in a short amount of time, as it serves as a tool to help students stay focused on the content found within these smallest sections, making it easily accessible to them which can take the form of learning through video segments, examining graphical data, or even participating in short-duration virtual classes through group discussions. In other words, micro learning is highly beneficial for students in learning a subject because the learning process consists of several sections that consciously or unconsciously encourage students to constantly focus on the taught material.

Additionally, micro learning is effective primarily because it uses human principles to guide. Smaller lessons are easier to digest and the knowledge gained is easier to review. The more often you repeat information, the more likely you are to retain what you have learned over time, therefore micro learning takes advantage of the fact that smaller sections are easier to review and repeat (Mohammed et al., 2018). This approach makes students less likely to experience cognitive overload, a phenomenon in which a person tries to learn too much too quickly. This information overload actually leads to poor learning. Briefly, micro learning provides benefits of learning process become meaningful by taking the time more efficiently and helping the students to maintain knowledge more effectively.

Nevertheless, micro learning is often used for workers in the use of companies to train the employees (Padmanaban, 2020). This study indicated the need for a learning approach that can accommodate both traditional and modern methods, utilizing various devices and widely accessible media, particularly with the advancement of mobile devices. Therefore, workers and users are heavily involved in the use of technology media in their daily activities. This research emphasizes that micro-learning is one of the methods that can accommodate the needs of workers and users. Nevertheless, micro learning applied in this study was for the employees who had limited time to do training so that they were able to learn in a short period of time without disrupting their daily tasks. Even though the implementation this kind of learning activity in higher education and universities has shown its benefit by focusing to some specific different disciplines, especially for providing students positive learning experiences (Lin et al., 2019; Osaigbovo & Iwegim, 2018; Shail, 2019; Mohammed et al., 2018). In English learning for writing ability, the approach has not been tested yet, even though this method has been scientifically addressed to be implemented, particularly in college for English teaching (Meng & Wang, 2016). Therefore, a question was addressed " Were the students taught using micro learning gained better score in their English writing text than the students who were not taught using micro learning" by conducting a study on "Micro learning for Undergraduate Students' Ability: An Effect on Writing English Text".

METHOD

This study employed an experimental research design, using tests to examine the hypotheses and establish causal relationships Airisian et al. (2012: 367). There were two types of classes involved in this study: the experimental class, which receives treatment in the form of micro learning, and the control class, which received conventional teaching method. The population for this research consisted of 124 students majoring in English Education in the academic year 2022/2023 at Muhammadiyah University of West

Sumatra which were divided into five classes. The sample was obtained through cluster random sampling, a method that randomly selects samples based on groups rather than individuals, provided that the population shares similar characteristics. This approach was employed to save time, enhance practicality, and aligns with Airisian et al. (2000: 129) that random cluster sampling is an efficient method in terms of time and cost utilization, as well as being more convenient for researchers.

Before selecting the experimental and control classes, the researcher conducted tests for normality and homogeneity on the students' scores within the population. Subsequently, the researcher utilized a lottery to assign the two classes for the study: the experimental class, which received micro learning treatment, and the control class, which was taught by using conventional method. The learning process consisted of eight sessions, with each session lasting 4 x 45 minutes. After eight learning sessions, the researcher administered a writing text test to the students to determine which teaching method was more effective in improving their writing skills. Additionally, the implementation of micro learning design in this research followed a six-step workflow based on the proposed activity design by Meng & Wang (2016), as shown in the figure below.

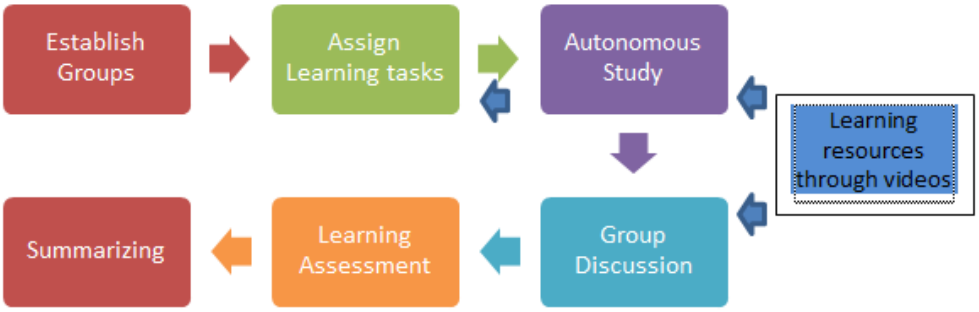

Figure 1. Micro Learning Design

The implementation mechanism of micro learning in the experimental class began by dividing the students into several groups and assigning them tasks provided by the lecturer. The material was presented through short videos (7-10 minutes) that showcase the taught content. The lecturer also provided instructions through projected slide segments and flashcards related to the material. Following this, the students were instructed to independently complete the assigned tasks, which were then followed by group discussions. In this phase, the use of videos and other learning tools was incorporated in short durations, repeated gradually twice, following steps 2 to 3, with intervals of approximately 10 minutes. Subsequently, the next phase involved learning assessment and summarization, conducted by both the lecturer and the students.

This research utilized writing descriptive text test as the instrument, aiming to assess students' writing skills, as stated by Airisian et al. (2000: 154) who emphasizes that tests serve as tools to gauge the extent to which test-takers comprehend the given material. The procedure for administering the test involved providing four topics to the students, allowing them the freedom to choose which topic they wanted to write about. Subsequently, the students' work was handed over to two evaluators, ensuring the researcher obtains reliable results. These scores were then calculated by referring to a writing rubric proposed by (Brown: 2003) which assessed five aspects: the structure or organization of the writing, the content, grammar, mechanics, and finally, the vocabulary utilized by the students in their writing.

By knowing the results before and after the experiment through the implementation of micro teaching, researchers can obtain data. After obtaining the scores from the written text, the researchers then enter those scores into Excel to conduct a t-test assuming unequal variances using SPSS 24. The average scores are obtained before and after the experiment. To determine whether students have improved their writing scores through the implementation of micro teaching, the researchers look for the statistical t-value with a significance level of <0.05. Furthermore, the researchers conduct further analysis through descriptive analysis.

FINDINGS AND DISCUSSION

Delivering the research question of this study for finding the effectiveness of micro learning on students' writing text skill as the central of this study, the result gained was that the method did give significant effect on the students' writing skill. This section provides an overview of the research question's answer based on data analysis. To answer the question, the results of the data analysis obtained from the table below:

Table 1. The Score of Pre-Test's Descriptive Statistic

Class	N	Mean Score	Maximum Score	Minimum Score
Experiment	17	28.50	50	0
Control	17	25.35	45	7

From the above Table 1, it can be observed that the minimum score for the experimental group was 0, while the score for the control group was 7. Furthermore, the maximum score for the experimental group was 50, indicating that this group has a higher maximum score compared to the control group, which had a maximum score of only 45. The test for the application of micro learning in the pre-test showed an average score of 28.50 for the experimental group and 25.35 for the control group. Therefore, it can be concluded that the experimental group had higher writing ability in writing text compared to the control group.

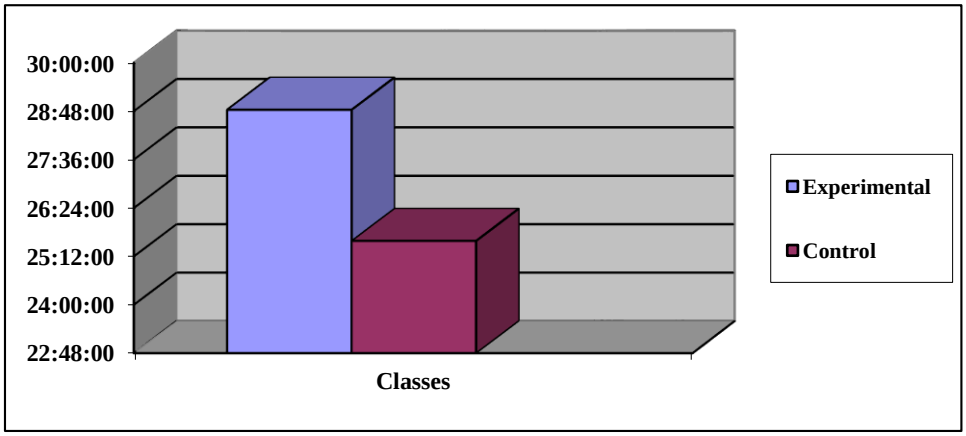

Diagram 1. The Pre-test Score Result of Experimental and Control Class

Based on the above Diagram 1, it can be observed that the average score of the control group is lower than that of the experimental group. The average score for the

experimental group reaches 28.50, while the average score for the control group is 25.35. After obtaining the comparative data between the experimental and control groups in the pre-test, further analysis was conducted by calculating the homogeneity and continuity tests of the pre-test data. Parametric tests or the U-Mann Whitney test were used for data that are normally distributed and homogeneous. However, if the test results indicated non-normality and inhomogeneity, non-parametric tests or the U-Mann Whitney test were employed. The following was the Pre-Test to assess the normality of the data.

Table 2. Result of Normality Testing in Experimental Class and Control Class for Pre-Test

Class	Asym p.sig. (2-tailed)	a (significant level)	Distribution
Experiment	0.060	0.05	Normal
Control	0.093	0.05	Normal

Based on Table 2, it can be observed that the data distribution was normal for both the pre-test results of the experimental and control groups. The experimental group had an Asymp. Sig (2-tailed) value of 0.060 with a significance level of 0.05. Therefore, the value of 0.060 > 0.05 indicated that the data distribution was normal for the experimental group. Similarly, the control group had a value of 0.093 > 0.05, indicating that the data was also normally distributed. Subsequently, a homogeneity test was conducted using the Levene's formula to analyze the data. The results of the homogeneity test for the pre-test can be seen in the following table.

Table 3. Result of Homogeneity Testing in Experimental Class and Control Class in Pre-Test

Data	a (significant level)	Asymp. Sig.	Distribution
Significant value	0.05	0.430	Homogeneous

Table 3 indicates that the pre-test for the experimental group is homogenous where the value is greater than 0.05 (0.430 > 0.05). This implies that the data from both groups exhibit homogeneous variance. Subsequently, a t-test was conducted to test the pre-test, as shown in the results below.

Table 4. Pre-Test's T-test Result

Data	Asym p.sig. (2-tailed)	a (significant level)	Hypothesis	Distribution
Pre-Test (t-test)	0.051	0.05	Accepted H0	Not different significantly

From the above Table 4, it is shown that the t-test results for both the experimental and control groups are not significantly different. This is indicated by the Asymp. Significance value of 0.051 (2-tailed), which is still greater than 0.05. It can be noticed that both the experimental and control groups do not exhibit a significant difference in their ability to write texts. After obtaining this data, the data gotten from

the post-test were as follows:

Table 5. The Score of Post-Test's Descriptive Statistic

Class	N	Average Score	Maximum Score	Minimum Score
Experiment	17	79.5	88	85
Control	17	69.4	72	45

Based on the table 5, it was noticed that the mean score in the experimental class was 79.5 and in the control class, it was 69.4. The maximum score in the experimental class was 88 and minimum score was 72. The range between the two groups of score was 16. While in the control class, the maximum score was 85 and minimum score was 45. The range between maximum and minimum score was 40. Therefore, to conclude, the experimental group had higher writing ability in writing text compared to the control group.

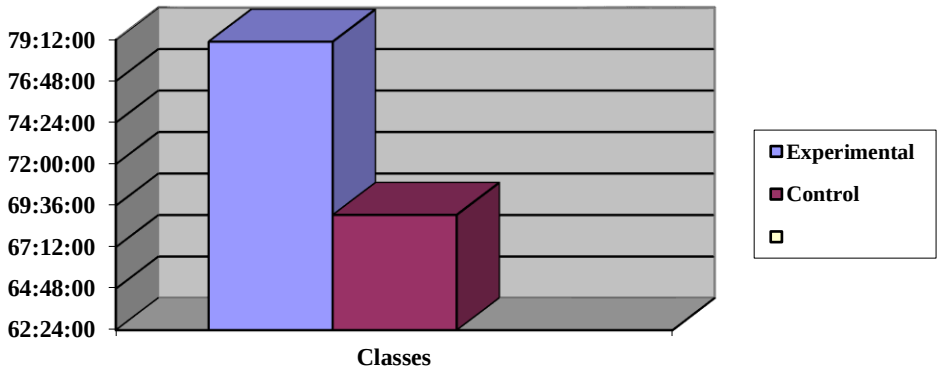

Diagram 2. The Post-Test Score Result of Experimental and Control Class

Based on the above Diagram 2, it can be observed that the average score of the control group is lower than that of the experimental group. The average score for the experimental group reaches 79.5, while the average score for the control group is 69.4. Additionally, the evaluation of students' writing ability in text composition is measured using five aspects: organization, content, grammar, mechanic, and vocabulary. The following table presents a comparison of the students' writing ability scores in the experimental and control groups.

Table 6. Writing Text's Indicator on Post-Test

No	Indicator	Experimental Class	Control Class
		Frequency	Frequency
1	Organization	70.00	56.33
2	Content	60.39	50.34
3	Grammar	65.55	37.00
4	Mechanic	73.33	60.00
5	Vocabulary	70.00	60.00

Based on Table 6, it was observed that the frequency of organization in the experimental group is 70%, while the control group shows a frequency of 56.33%. Additionally, the frequency of content in the experimental group is 60.39%, whereas the control group obtained a frequency of 50.34%. Furthermore, the frequency of grammar in the experimental group is 65.55%, while the control group shows a frequency of 37.00%. Moreover, the frequency of mechanic in the experimental group is 73.33%, compared to the control group with a frequency of 60.00%. Lastly, the frequency of vocabulary in the experimental group is 70%, while the control group obtained a frequency of 60.00%. Based on this data, to conclude, the scores for each evaluated indicator of students' writing ability using micro learning in the experimental group show better or higher values compared to the respective indicator scores obtained by the control group, as indicated by the lower frequency percentages.

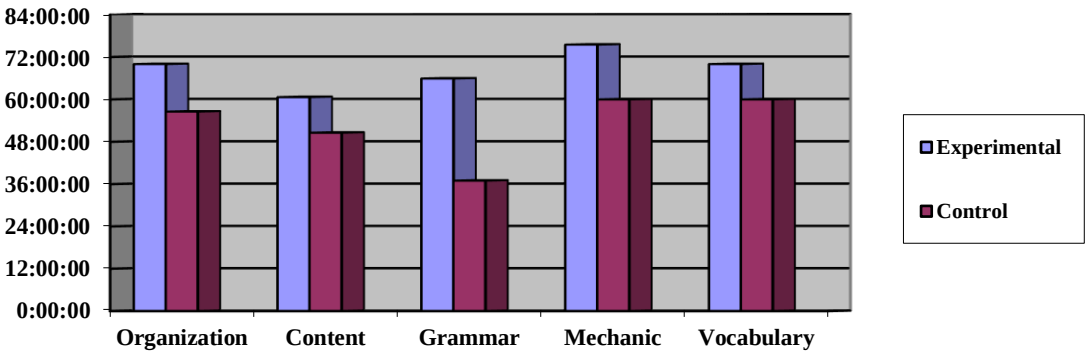

Diagram 3. Writing Text Ability' Indicators on Post Test

Through the above Diagram 3, it can be observed that there were differences in the percentage of scores obtained by both classes in the elements of organization (experimental group: 70% and control group: 56.33%), content (experimental group: 60.39% and control group: 50.34%), grammar (experimental group: 65.55% and control group: 37.00%), mechanic (experimental group: 73.33% and control group: 60.00%), and vocabulary (experimental group: 70% and control group: 60%). After obtaining this data, the normality and homogeneity tests were conducted for further analysis. The result of the normality of the data can be seen in Table 7.

Table 7. Result of Normality Testing in Experimental and Control Class for Post-Test

Class	Asymp.Sig.(2-tailed)	a (Significance level)	Distribution
Experiment	0.558	0.05	Normal
Control	0.328	0.05	Normal

From the above Table 7, the results of the normality test for both the experimental class and the control class indicated a normal distribution. The asymp. Significance (2-tailed) value for the experimental class was 0.558, and for the control class was 0.328. Both of these values are higher than the significance level of alpha (0.05). In other words, the writing scores of students, both in the experimental class and the control class were in normal distribution.

After obtaining the results of the normality test for both classes, the researcher proceeded to assess homogeneity by conducting a homogeneity test to determine whether the experimental class and the control class were homogenous or not. This test was performed using the SPSS 15 software through a Levene test with a significance level of 0.05. The results of this calculation were as follows.

Table 8. Result of Homogeneity Testing in Experimental & Control Class in Post-Test

Data	Significance level	Asymp. Sig.	Distribution
Significant value	0.05	0.889	Homogeneous

The data from table 8 shows that the significant value of the writing test was 0.889 which was higher than α (sig >0.05). It means that the variance of writing test was homogeneous.

Hypothesis Testing

H1 : Micro learning method gives significant effect on undergraduate students' writing text ability compared to conventional method

H0 : Micro learning method does not give significant effect on undergraduate students' ability in writing text compared to conventional method

The hypothesis was assessed to know whether Micro learning method gave significant effect on undergraduate students' ability in writing text compared to conventional method. The result can be noticed in table 9.

Table 9. Result of Students' Writing Achievement through t-test for Experimental Class and Control Class

Data	t observed	t table	Conclusion
Post-Test	2.795	2.306	t observed > t table H1 is accepted

Table 9 displays the data obtained from both classes, namely the experimental class and the control class. The results obtained after conducting a t-test revealed that the observed t-value was 2.795, which was greater than the critical t-value of 2.306 found in the t-table. This indicated that H1 was accepted, and H0 was rejected, or it can be stated that micro learning demonstrated a significant effect on students' writing abilities compared to the conventional method.

Based on the result of the hypothesis, it was proven that Micro learning

increased students' engagement and made the learning much easier for students noticed from the difference of score gained before and after the treatment. It is in line with Yuniarsih et al., (2022) who say that micro learning provides learning that is divided into several short segments, which can be supported by the use of various platforms. Due to the segmented nature of micro learning, it typically lasts only a few minutes and can be easily accessed, for example, through mobile devices (Meng & Wang, 2016). The concept of micro learning (ML) has often been highlighted as an effective learning strategy for various learning phenomena (Khong & Kabilan, 2022). Micro learning is becoming more and more familiar since it is easy to use and implemented in many different ways. It is convenient for busy people and those who want to know new information. Additionally, micro learning is reasonable and can be applied with other forms of learning. The goal of this study is to present information in a way that people can easily remember and apply in their daily lives.

Based on the result of the research, there were four reasons for making micro-learning was an effective method of learning. First, since the content of the learning was divided in short time duration of session, the focus during learning was not distracted by things outside the context. The time for presentation of the material that was very short resulted in an easy to understand. It was surely economical, efficient, and effective. Second, short content exposure could cut learning time. Third, adjustment of the conditions and needs of learning topics were possible since it was a short chunk of learning materials. Fourth, students could study anytime, anywhere, individual study or group study according to their convenience.

CONCLUSION

Based on the research formulation "Were the students taught using micro learning gained better score in their English writing text than the students who were not taught using micro learning", it had been answered by the result of the research that the students who were taught with micro learning display significant difference in their ability in writing text compared to the students who were not taught by micro learning. Therefore, it can be concluded that micro-learning was able to make the learning process became more effective for four reasons. First, the first aspect is that providing the learning material in segments helps students to stay focused on the given content and prevents their attention from being diverted. Additionally, the short duration of each segment facilitates easier comprehension of the material. The second aspect is that the allocation of short time intervals contributes to making students' study time more effective and efficient. The third aspect is that presenting the material in segmented form helps students fulfill their learning needs by adapting to the conditions of micro learning. The fourth aspect is that students have the opportunity to learn flexibly, individually or in groups, anytime and anywhere, according to their comfort and needs. However, the success of this micro learning method depends on the students' personal learning abilities, the digital literacy competence of the instructors, and external conditions such as the availability of required learning resources. These aspects were not considered during the course of this research, and it is expected that they can serve as a foundation for further in-depth research for another researchers on micro learning, particularly in English language learning.

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