



The impact of game-based student response system on students' learning outcomes in narrative writing

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Abstract

This paper is based on research aiming to explore and evaluate the effectiveness of a game-based student response system platform, Kahoot, for teaching narrative writing. By using one group pre-test and post-test design, this quantitative research invited the eleventh-grade students of a senior high school in the academic year of 2021/2022, to actively participate in the project. In this case, the researchers administered a pre-test and post-test for measuring the significant difference in students' scores, before and after the implementation of Kahoot. Based on the paired sample t-test result, the p-value is 0,000. In addition to that, the t-coefficient is greater than the t-table value, which is $18,436 > 2,030$. It means that the difference between students' skills in writing a narrative text before and after the use of Kahoot, is statistically significant. Specifically, Kahoot could enhance students' writing in terms of organization, ideas development, grammar, mechanics, and writing style. Since the p-value is less than the significant level or $0,000 < 0,05$, and the t-coefficient (18,436) is greater than the t-table (2,030), it can be safely concluded that Kahoot could significantly improve students' writing skills, specifically in writing a narrative text.

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INTRODUCTION

Writing is considered a part of literacy and the consciousness language in today's society. In the context of foreign language learning, writing plays a crucial role in enhancing the other three language skills and language components, including vocabulary, grammar, and pronunciation. For English language learners, writing is the most important skill to master among the four basic English language skills. Yet, both teachers and students still argued that writing is the most difficult skill for English language learners (Kris et al., 2016; Permatasari, 2013). Regan et al. (2019) have discussed in their study, with regard to the perceived writing needs for students, that students found writing difficult in the context of idea generation, organization, handwriting, sentence structure, grammar, spelling, and keyboarding. They further explained that students' writing was full of run-on sentences and lack of detail. Muamaroh et al. (2020) also mentioned several factors that affect students' writing skills, such as not being confident in their English writing, low grammar proficiency, low vocabulary mastery, and lack of writing practices. In addition, students have been finding it more difficult to improve their writing skills during distance learning. They stated that there is a lack of practical use of their writing skills during distance learning. In short, writing is recognized as the foremost problem that English language learners face.

In senior high school, students are usually introduced to some English texts that could help them in mastering their writing skills. One of those texts is narrative text. The narrative text is usually taught in the eleventh grade. In this subject, the students are expected to write a good narrative story by themselves. However, based on the preliminary study in a senior high school, the students were stated that they still faced some problems in writing, especially in writing a story. The major problems they faced are fear of making grammatical mistakes, lack of vocabulary mastery, and problems in idea generation. Those problems cause them to not be interested in the writing classroom. Thus, the students' writing skills still needs to be developed.

In this case, teachers play a crucial role in developing students' writing abilities. As stated by Shahsavar and Asil (2019) in their study, teachers have to give more assistance to enhance the students' writing skills. Teachers and students must realize that writing does not only require knowledge about grammar, ideas, and vocabulary, but writing is a process of planning, initiating, monitoring, and evaluating. The existence of intelligence and abilities of the students actually can enhance their writing skills. Thus, teachers need to apply a proper teaching strategy that can support the students' learning. For instance, teachers can integrate the use of technology in the classroom. It is proven that the use of an ICT platform can be useful for teachers in improving their performance in English language teaching (Haswani, 2014; Lee, 2019; Xu et al., 2019). In addition to that, the technology integration into classroom practices can also enhance students' learning as it has been a part of a new teaching system for supporting 21st-century skills. Furthermore, the continuation of technology use in the classroom is supported by the familiarity of technology among teachers and students (Abkarin, 2021).

One of the technology advancements for educational purposes is a game-based student response system platform, Kahoot. Holbrey (2020) has defined Kahoot as a game-based student response system platform that is designed as a means to bring classroom engagement by providing some fun and enjoyable learning games design. Ruiz (2021) has noted in his research that Kahoot was developed in 2013 in order to help teachers in managing their teaching and learning process through any device. According to Bawa (2019), there are some interesting and changing values that make Kahoot closely relate to effective teaching and learning, including motivating, learning assistance, helpful, exciting, entertaining, difficult, and competitive. As a free student response system tool, there are some things that a teacher could do by using Kahoot. Firstly, a teacher could use Kahoot for introducing new content. Secondly, a teacher can use Kahoot for reviewing content. Next, Kahoot can be used for reaching the students who aren't at school. Besides, Kahoot can be used for teaching interactive lessons. Additionally, a teacher can use Kahoot for reinforcing knowledge. Furthermore, Kahoot can be used for running a formative assessment. In addition to that, Kahoot can be used for collecting students' opinions. Lastly, Kahoot can be used for fostering creativity and teamwork.

In classroom practices, Kahoot is commonly used for running a formative assessment (Elkhamisy & Wassef, 2021; Kohnke & Moorhouse, 2021; Wang & Tahir, 2020). They further mentioned that Kahoot is valuable as an assessment tool, for increasing students' academic performance. In line with that, Goksun and Gursoy (2019) also compared the use of Kahoot and Quizzes as an assessment tool. The result showed that Kahoot has a better impact than quizzes. Next, in the language classroom, Kahoot has been used for increasing students' motivation and engagement

(Baszuk & Heath, 2020; Piskorz, 2016; Yunus et al., 2019). Those previous findings indicate that not all teachers utilize Kahoot for enhancing their teaching performance.

Based on several studies that have been reviewed, there are still several gaps that have to be filled in. Firstly, most previous studies examined the use of game-based student response system platform Kahoot, as an assessment tool rather than as a teaching tool. It indicates that Kahoot is commonly utilized for administering formative assessment. Secondly, the majority of previous studies focused on investigating the use of Kahoot as a tool to improve students' engagement and classroom dynamics, rather than as a tool to improve students' academic performance. Thirdly, in the language classroom, Kahoot was commonly used as a tool to increase students' motivation and interest rather than to increase students' language skills. Lastly, there is a lack of research that examines the use of Kahoot for teaching writing. In short, there has been limited research done on using Kahoot as a teaching and learning aid for increasing students' academic performance in language learning. Therefore, the present study responds to a call for investigating the role of Kahoot, as a teaching and learning tool, in increasing students' skills in writing narrative text.

The present study aims to investigate the effectiveness of a game-based student response system platform, Kahoot, which is used for teaching narrative writing. Thus, the result of the study could hopefully be empirical evidence for teachers and students to integrate a game-based student response system platform in a more purposeful way towards English language teaching and learning, especially for writing class.

METHODS

The present study is quantitative research which applied the one-group pretest-posttest design. It was carried out in a senior high school by inviting thirty-six students of the eleventh-grade, to participate in the research. Furthermore, the instrument used for gathering the research data was test, in which the students were asked to write a narrative text. This test was developed based on the basic competence 4.5, which is stated in the English syllabus for the eleventh-grade students in the academic year 2021/2022. Also, the test has been validated by experts before being administered. In relation to that, Kahoot was used as the treatment or intervention, for supporting students' learning. In this case, the researchers integrated the teaching materials about narrative writing in the form of Blind Kahoot'Ing. By using this concept, the researchers designed the teaching materials for narrative writing, which consist of tricky questions and presentation slides. The teaching materials prepared were mainly about narrative text and the steps in writing a narrative text.

Table 1. A Visual Representation of a One-Group Pretest-Posttest Research Design (Allen, 2017)

Pretest	Treatment	Posttest
O ₁	X	O ₂

In which:

- O₁ : Pretest on the students' writing skills before the treatment is implemented
- O₂ : Posttest on the students' writing skills after the treatment is implemented
- X : Treatment that will be given for the students regarding narrative writing

According to Allen (2017), a one-group pretest-posttest design is carried out in three phases, which are pretest, treatment, and posttest. In this study, the pretest was carried out in the first meeting. In this case, the students were distributed a paragraph constructing task, that they have to individually write a narrative text based on their personal experiences. In addition to that, the researchers provided a writing template to use and four writing topics to choose, including childhood memory, funny story, embarrassing story, and school memory. Actually, the test is an online assessment that was distributed through the class team in Microsoft Teams, and the students compiled their works within three days by sending it via email. The next phase was the implementation of a game-based student response system platform, Kahoot. In this study, the use of Kahoot was implemented in the second to the fifth meeting. Also, it was implemented through discovery learning model, specifically in the problem statement stage, data collection stage, data process stage, and verification stage. In this implementation phase, the researchers hosted the Kahoot, and the students took a role as the Kahoot players. Following the treatment, the posttest was administered in the sixth meeting. For the posttest, the students were asked to write a personal narrative text based on one of the four writing topics

provided, including place they traveled, surprising story, betrayal, and great accomplishment. Basically, the post-test is still the same as the pre-test, which was administered online, and the students compiled their work within three days by sending it via email. Moreover, the pre-test and post-test scores were needed for testing the research hypotheses, which are the null hypothesis and the alternative hypothesis. In this case, the null hypothesis states that there is no significant impact of a game-based student response system platform, Kahoot, on students' writing skills. Whereas, the alternative hypothesis states that there is a significant impact of a game-based student response system platform, Kahoot, on students' writing skills.

There were three phases of data analysis, namely assessing students' writing, testing the normality of the research data, testing the homogeneity of variances, and conducting a paired t-test. Firstly, the researchers used a scoring rubric adopted from Brown and Bailey (1984, as cited in Brown & Abeywickrama, 2018), that has been validated by experts, for assessing students' writing. This scoring rubric highlights some elements of writing, including organization, writing ideas, grammar, mechanics, and style of writing. Secondly, the normality test was conducted in order to know whether or not the research data is normally distributed, before administering the paired t-test. This test was done using SPSS, specifically used Kolmogorov-Smirnov test. The result showed that the research data was normally distributed, that then can be analysed using parametric test. Lastly, the paired t-test was administered for measuring the pretest and posttest scores of students' writing so that it could be known if there is a significant change. The paired t-test was also done using SPSS.

FINDINGS AND DISCUSSION

Findings

The research question that has been investigated by the researchers is how effective a game-based student response system platform is in enhancing students' skills in writing narrative text. In order to explore and answer this question, the researchers administered two tests, namely pre-test and post-test. The student's individual scores in pre-test and post-test are attached in the Appendix B. Next, the test results were analyzed in three phases, namely normality test, homogeneity of variance test, and paired samples t-test. For analyzing the normality distribution of the pre-test and the post-test scores, the researchers used the Kolmogorov-Smirnov test. The result of the normality test is shown in Table 2.

Table 2. The Normality Test Result

One-Sample Kolmogorov-Smirnov Test			
		PreTest	PostTest
N		36	36
Normal Parameters ^{a,b}	Mean	53.1944	76.8056
	Std. Deviation	9.41373	5.18690
Most Extreme Differences	Absolute	.105	.092
	Positive	.105	.089
	Negative	-.081	-.092
Test Statistic		.105	.092
Asymp. Sig. (2-tailed)		.200 ^{c,d}	.200 ^{c,d}
a. Test distribution is Normal.			
b. Calculated from data.			
c. Lilliefors Significance Correction.			
d. This is a lower bound of the true significance.			

Generally speaking, a normality test is required to determine whether the research data will be analyzed using a parametric test or a non-parametric test. The rule of this test states that the data will be analyzed using a parametric test only if the research data is normally distributed. Whereas, the data will be analyzed using a non-parametric test if the data is not distributed normally. In line with that, the Kolmogorov-Smirnov test' rule mentions that a research data is considered normally distributed if the p-value is more than 0,05. On the other hand, the test is considered not distributed normally if the p-value is less than 0,05. As shown in Table 2, the test distribution result is normal as the significance value or the p-value is 0,200. Thus, the research data in the present study could be analyzed using a parametric test.

In addition to the normality test, the researchers also tested the homogeneity of variance of the research data. The result shows in Table 3.

Table 3. The Homogeneity of Variances Test Result

		Test of Homogeneity of Variances				
		Levene Statistic	df1	df2	Sig.	
PreTest	Based on Mean	3.909	9	16	.009	
	Based on Median	2.525	9	16	.051	
	Based on Median and with adjusted df	2.525	9	8.717	.095	
	Based on trimmed mean	3.834	9	16	.009	
PostTest	Based on Mean	3.909	9	16	.009	
	Based on Median	2.525	9	16	.051	
	Based on Median and with adjusted df	2.525	9	8.717	.095	
	Based on trimmed mean	3.834	9	16	.009	

Based on Table 3, it can be seen that the p-value is 0,009. It means that we have violated the assumption of homogeneity of variance since the p-value is less than 0,05. In other words, the data from the pre-test and post-test results are unequal.

Since the research data is normally distributed, the parametric test used by the researchers to analyze the pre-test and post-test was paired-sample t-test. The purpose of using this parametric test is to compare students' pre-test and post-test scores so that it could be seen whether there is a significant difference in students' scores, before and after the treatment was implemented. The paired-sample t-test rules state that the difference score is considered significantly improved if the significant value of paired samples test result is less than 0,05. Whereas, there is no significant difference if the significant value is more than 0,05. The result of the paired-sample t-test in the present study is shown in Table 4.

Table 4. The T-Test Result of Pre-Test and Post-Test Scores

		Paired Samples Test							
		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	PreTest - PostTest	-23.61111	7.68404	1.28067	-26.21102	-21.01121	-18.436	35	.000

As shown in Table 4, the p-value or the Sig. (2-tailed) is 0,000. It means that there is a significant difference between the students' pre-test and post-test scores as the p-value is less than the significant level, which is 0,05. In addition to that, the result also shows that the t-test coefficient is 18,436, and the t-table is 2,030. Since the t-coefficient is greater than the t-table, it indicates that there is a significant improvement on students' writing, before and after the use of Kahoot. Based on those two results of analysis, it can be safely said that a game-based student response system platform, Kahoot, is effective to enhance the students' skills in writing a narrative text.

More specifically, each writing criteria was also analyzed statistically. It includes the pre-test and post-test scores of the organization, ideas development, grammar, punctuation, spelling & mechanics, and style of writing. This analysis is required to know the improvement of students' writing in each aspect of writing.

Organization

In writing narrative text, the organization deals with the students' ability in organizing their writing based on the basic structure of the narrative text. There are three major structures of writing, including an introduction paragraph, a body paragraph, and a conclusion paragraph. In line with that, the basic structures of narrative writing are orientation, complication, resolution, and re-orientation. In this area, the students are expected to write a narrative story based on those basic structures. The result of the paired-sample statistics test of students' writing scores in the area of organization is presented in Table 5.

Table 5. The Paired-Sample Statistics Result for Organization of Writing

		Paired Samples Statistics			
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	OrganizationPre	11.8611	36	2.35618	.39270
	OrganizationPost	16.6944	36	1.60035	.26672

Table 5 shows that students' writing in the aspect of the organization is improved. It is stated that the mean score in the pre-test is 11,9, whereas, the mean score in the post-test is 16,7. It means that the post-test score is 4,8 points higher than the pre-test score. In conclusion, students could organize their writing well after the use of Kahoot.

Logical Development of Ideas

The second aspect of writing is the logical development of ideas. Ideas refer to students' ability in developing the content of writing based on the writing topic. With regards to narrative text, ideas deal with the way students choose the writing topic and develop the topic into a story based on the gathered shreds of evidence, which is from their personal experiences. In addition to that, ideas refer to the 5W + 1H questions: 1) what the story happened; 2) when the story happened; 3) where it took place; 4) who were involved; 5) why it could happen; 6) and how it could happen. The result of the paired-sample statistics test of students' writing scores in the area of ideas development is presented in Table 6.

Table 6. The Paired-Sample Statistics Result for Ideas Development of Writing

		Paired Samples Statistics			
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	IdeasPre	10.4444	36	2.84298	.47383
	IdeasPost	14.3611	36	1.88457	.31409

Based on Table 6, the students' ability in developing their writing ideas was improved significantly after the use of Kahoot as a teaching and learning tool. Before the use of Kahoot, the mean score of the ideas development in the students' writing is only 10,4. However, the mean score is improved to 14,4 after the implementation of Kahoot. It shows that the logical development of ideas is improved 3,9 points. Therefore, it can be concluded that the use of Kahoot positively fosters students' ability in developing their writing ideas.

Grammar

Grammar is the most important aspect of writing. Generally, grammar is recognized as the rule of the English language when it comes to a writing activity. It refers to the use of tenses sequencing, relative clauses, prepositions, modals, articles, and also verb forms. In narrative writing, there are also some language features that the students should pay attention to it. It includes the use of past tense, action verbs, and reported speech. The result of the paired-sample statistics test of students' writing scores in the area of grammar is presented in Table 7.

Table 7. The Paired-Sample Statistics Result for Grammar

		Paired Samples Statistics			
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	GrammarPre	10.6389	36	2.86010	.47668
	GrammarPost	16.6389	36	1.33423	.22237

From Table 7, it can be safely said that students' grammar proficiency in writing narrative text is improved. It is improved from 10,6 points to 16,6 points. It means that the differences scores reach 6 points of improvement. Thus, the use of Kahoot has significantly enhanced students' grammar proficiency.

Mechanics

In writing, mechanics refer to the rules of written language, such as capitalization, spelling, and punctuation. More specifically, the mechanics of writing are the established rules that should be followed in sentence writing, paragraph writing, and even essay writing. It is well known that spelling,

punctuation, and capitalization go hand in hand with the rules of grammar. Thus, both of them are basically related. The result of the paired-sample statistics test of students' writing scores in the area of writing mechanics is presented in Table 8.

Table 8. The Paired-Sample Statistics Result for Mechanics of Writing

		Paired Samples Statistics			
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	MechanicsPre	11.6944	36	2.43568	.40595
	MechanicsPost	16.9167	36	1.15573	.19262

Based on Table 8, students' ability in using correct capitalization, spelling, and punctuation was improved. The mean point is just 11,7 before the use of Kahoot, however, it was improved to 16,9 points after the use of Kahoot. It proves that the use of Kahoot could enhance students' mechanics of writing with 4,3 points of improvement. Therefore, it can be concluded that Kahoot could improve students' writing mechanics.

Style and Quality of Expression

Style and quality of expression in students' writing refer to the use of precise vocabulary, sentence variety, parallel structure. It is closely related to the use of word choice and sentence fluency. In writing a narrative text, the students should use the right word that could give clarity and evoke feelings. Additionally, the students should know whether or not their writing is easy to read, use different kinds of sentences, use some short and long sentences, and even begin with different words. The result of the paired-sample statistics test of students' writing scores in the area of writing mechanics is presented in Table 9.

Table 9. The Paired-Sample Statistics Result for Style and Quality of Expression

		Paired Samples Statistics			
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	StylePre	8.6389	36	2.29475	.38246
	StylePost	12.2778	36	1.68372	.28062

Referring to Table 9, the students' ability in using style and quality of expression towards their writing is improved 4,3 points. The mean score of the pre-test is just 8,6 points while the mean score of the post-test shows 12,3 points. Therefore, the use of Kahoot has positively fostered students' writing in the aspect of style and quality of expression used.

Discussion

Kahoot for Teaching Narrative Writing

Based on the study result, it can be safely said that students' skills in writing a narrative text is improved with the use of Kahoot. It was clearly stated that their writing was improved towards the five aspects of writing, including organization, logical development of ideas, grammar, punctuation, spelling & mechanics, and style & quality of writing. Firstly, the organization in narrative writing typically refers to the generic structure of a narrative text, including orientation, complication, resolution, and re-orientation. In addition to that, the organization also refers to the students' skills to organize their paragraphs and sentences. Secondly, ideas development in writing is the way a writer develops their writing topic using appropriate supporting shreds of evidence or supporting ideas. Writing is considered logically developed if the writer also uses the most suitable connections between ideas, in order to make a logical sense towards the writing. Thirdly, grammar refers to the rules of writing, including morphological rules, phonological rules, and syntactical rules. In writing a narrative text, students must be aware of the language features used, such as past tense, linking words, action verbs, verbal, and mental processes, even direct and indirect speech. Fourthly, writing mechanics are the technical aspects of writing, including spelling, punctuation, capitalization, and abbreviations. Lastly, the writing style in a narrative text refers to the way of students in using word choice and a variety of sentences in their writing. Thus, in this part, the paired-samples statistics analysis result of those five writing elements is interpreted based on the writing criteria, including organization, logical development of ideas, grammar, punctuation, spelling, mechanics, style, and quality of writing.

Firstly, the paired-samples statistics analysis showed that students' skills in organizing their writing was improved 40,8%, from 11,9 to 16,7. As stated in the scoring rubric, 11,9 is considered unacceptable while 16,7 is good. It means that before the use of Kahoot, students still encountered some problems in organizing their writing. These problems include the ideas ordering problem, lack of supporting evidence, weak or illogical conclusion, and inadequate effort at the organization. Whereas, students' writing was improved after the use of Kahoot. Their writing is organized logically and coherently, starting from the introduction paragraph, body paragraph, and conclusion paragraph. Besides, they could use an adequate title although some ideas weren't fully developed. All in all, Kahoot has improved students' skills in organizing their writing.

Secondly, the points of logical ideas development were improved 37,5%, from 10,4 to 14,4. It means that students' skills in developing their writing ideas in narrative writing was improved from unacceptable to fair. Before the implementation of Kahoot, students experienced some problems with their story development, such as incomplete ideas, lack of careful thinking or hurriedly written, and inadequate effort in the area of content development. Whereas, the implementation of Kahoot could enhance students' writing so that the writing could address the assigned topic, and consisted of some extraneous materials although the ideas could be more developed. Therefore, Kahoot has improved students' writing in terms of ideas development.

Thirdly, students' skills in using correct grammar was improved 56,4%, from 10,6 points to 16,6 points. According to the scoring rubric, it is improved from unacceptable to good. In other words, students' writing had numerous serious grammar problems before the use of Kahoot. The problems include some difficult sentences to read that directly affect the communication of the ideas, so it needs a grammar review in some areas. However, the students' writing did not encounter some serious grammatical errors after the game-based student response system platform Kahoot was implemented. It means that Kahoot was successfully enhanced students' grammar proficiency.

Fourthly, students' mechanics of writing was improved 44,7%, from 11,7 points to 16,9 points. It means that the mechanics of students' writing improved from unacceptable to good. Before the treatment of Kahoot, students' writings have encountered lots of errors in punctuation, spelling, and capitalization. More specifically, they did not use periods or questions marks, and capital letters in the right places, leave spaces between words, and poor spelling. However, the students could minimize those errors after the use of Kahoot. It means that Kahoot is successfully helped students to learn the mechanics of writing.

Lastly, students' skills in using style and quality of expression was improved 42,1%, from 8,6 points to 12,3 points. It is improved from unacceptable to fair. Before the use of Kahoot, the students' writing did not contain different kinds of sentences, was too wordy, and had no precise word selection. It caused their writing to be difficult to read the first time. Yet, they could improve the use of sentence variety and word choice, after the use of Kahoot.

The Success of Kahoot Implementation

Kahoot is not a new digital technology; it has been widely used for educational purposes. Kahoot is categorized as educational technology since it has some elements that could facilitate the teaching and learning process in the classroom. Basically, educational technology could be used in the classroom as a teaching tool and an assessment tool. Referring to the previous studies related to the use of Kahoot in a language classroom, Kahoot was proved to be an effective tool. However, Kahoot is commonly used as an assessment tool rather than as a teaching tool. As a formative assessment tool, Kahoot could enhance students' learning performance (Elkhamisy & Wassef, 2021; Goksun & Gursoy, 2019 ; Kohnke & Moorhouse, 2021). In contrast with those previous studies, in the present study, the researchers utilized Kahoot as a teaching tool. Specifically, the researchers used Kahoot to teach the students about narrative writing. The result indicates that Kahoot is effective to foster students' skills in writing a narrative text. It means that Kahoot is valuable not only as an assessment tool, but also as a teaching tool. Thus, the present study proves the effectiveness of a game-based student response system platform, Kahoot, as a teaching tool. In line with that, this finding strengthens the previous studies conducted by Haswani (2014), Lee (2019), and Xu et al. (2019), that an ICT platform could positively enhance the teaching and learning process in language classroom.

Basically, there are some factors affecting students' skills in writing a text. Those factors are categorized into two major factors, namely internal factors and external factors. In this case, internal factor commonly refers to cognitive factors that could boost or reduce students' writing skills. It includes the students' intelligence, interest, and motivation in learning to write. Whereas, an external

factor generally refers to social and affective factors. It includes their learning environment and the teaching methodology applied by the teacher. Therefore, this section discusses the way Kahoot successfully enhanced students' writing skills based on those factors.

Kahoot could enhance students' writing skills through the internal factors of writing. As mentioned earlier, there are some internal factors that could affect the success of Kahoot implementation in improving students' skills in writing a narrative text. First and foremost, the teaching materials which were integrated into Kahoot, could foster students' intelligence in writing. In relation to writing, intelligence here refers to the students' knowledge and skills in writing a narrative text, including vocabulary mastery and grammar proficiency. In this case, Kahoot could improve students' writing in the form of organization, ideas development, the use of grammar, punctuation, spelling, mechanics, and also their style of writing. In doing so, the students were trained to do some exercises with regard to those topics. By training and challenging themselves anytime and anywhere they want, they could increase their writing skills gradually. This finding relates to the previous study conducted by Permatasari (2013), which found that the use of an interesting content material could help the students in learning narrative writing. Secondly, Kahoot could boost students' motivation. As mentioned by Kohnke and Moorhouse (2021), students were highly motivated in learning English by the use of Kahoot towards the teaching and learning process. Motivation is one of the most important things to build among the students as it directly affected students' performance and academic achievement. The present study also indicates that the use of Kahoot could reduce students' boredom, and it makes students become more excited during their learning process. Towards the survey result, most of the students agreed that they were enthusiastic during the teaching and learning process by Kahoot. Therefore, in relation to students learning to write, Kahoot could be an alternative teaching media that enhance their motivation to write. Thirdly, Kahoot could successfully enhance students' writing as Kahoot fostered students' engagement towards the teaching and learning process. If students are fully engaged in the classroom, they could easily understand what the teachers deliver to them. Goksun and Gursoy (2019) also stated that Kahoot was positively increased students' attention and focus during the teaching and learning process. In the present study, the students mentioned that Kahoot could be an alternative tool to build an active classroom. It means that the use of Kahoot promotes a meaningful learning experience that could enhance students' writing skills. Additionally, the students also became more interested in learning to write by the use of Kahoot. In conclusion, Kahoot could improve students' skills and knowledge in writing narrative text, and it also fosters their motivation and engagement in the writing classroom.

In addition to internal factors, Kahoot also could foster students' writing towards its external factors, namely learning environment and teaching performance carried out by the teacher in the classroom. First and foremost, Kahoot could build a learning environment which is fun, interactive, and interesting. As Tom Malone's theory stated, there are three categories that make things fun to learn, including challenge, fantasy, and curiosity. Challenge refers to a series of goals with uncertain outcomes. A challenge could be designed through the use of different levels of difficulty, hidden information, and randomness. Kahoot provides a time limit and scoreboard which challenged the student to do better than the other student. In other words, the challenge in Kahoot is to answer the questions provided as quickly as possible, and the final scores are uncertain until all students finish the game. This competitiveness creates a sense of a challenge for them. Next, fantasy is the game environment that could satisfy the players. Kahoot provides some fantasy elements for students, including the use of audio, video, image and also the use of different types of questions such as Quiz, True or False, Type Answer, Puzzle, Poll, Word Cloud, Open-ended, Brainstorm, and also slides. The use of those different elements could reduce students' boredom and increase their engagement during the teaching and learning process. Moreover, Kahoot could also build curiosity among the students. The curiosity in Kahoot refers to the use of random elements or questions. All in all, Kahoot could provide a learning environment which positively supports students' learning experience, especially in learning to write.

Based on that analysis, it can be safely concluded that Kahoot is an appropriate teaching tool for supporting students' learning, especially in learning to write. This finding relates to the previous studies which found out that a game-based student response system could improve students' motivation, engagement and classroom dynamics (Baszuk & Heath, 2020; Piskorz, 2016; Yunus et al., 2019). Basically, those three areas are closely related to the teaching and learning process in the classroom. It is well known that the students could learn and understand the teaching materials only if they could boost their interest and motivation throughout the materials. In line with that, the present

study results strengthen that finding in the area of students' writing skills. The result of the present study indicates that Kahoot is effective and appropriate to be used in classroom practices since it could boost students' writing skills by increasing their motivation and engagement during the teaching and learning process. Thus, this result conveys a novelty in terms of using a game-based student response system platform, Kahoot, as a teaching tool, specifically for teaching and improving students' writing skills.

CONCLUSION

As the objective of the present study is to explore and evaluate the effectiveness of the game-based student response system platform Kahoot in enhancing students' skills in writing narrative text, the researchers have implemented the use of Kahoot for teaching narrative writing. Based on that implementation, the result indicates that Kahoot is effective to be used for enhancing students' writing skills, especially for writing a narrative text. This major conclusion comes from the paired t-test analysis result which shows that the p-value of students' pre-test and post-test scores is 0,000, or less than 0,05. Additionally, the t-coefficient is also greater than the t-table, which is $18,436 > 2,030$. It means that the H_0 is rejected and the H_a accepted. In other words, the students' writing skills is improved with the use of Kahoot. Further analysis revealed that Kahoot is proven to significantly improve students' writing in terms of organization, ideas, grammar, spelling, mechanics, and writing style. Thus, it can be safely said that Kahoot could effectively enhance students' writing skills.

It is also worthy of note that the success of Kahoot implementation in narrative writing class is closely related to the factors affecting students' learning, including students' competence, motivation, interest, and engagement. In relation to that, hopefully, the result of this study could increase the use of Kahoot as a teaching tool in language classroom practices. While the researchers have presented and discussed several insights towards the present study, the absence of a control group in the present study may affect the accuracy and the validity of the study results. Thus, the researchers also suggest future research to investigate the implementation of Kahoot towards narrative writing class using true-experimental research since a control group is needed in order to gain a strong internal validity of the research data.

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