



Correlation between Game-Based Learning Application and Students' Writing Skills: A Study at a State High School in Serang

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Abstract

As one of the four language skills, writing is considered difficult since it requires the mastery of all other skills. Many students often face difficulties in learning writing, including narrative. To handle this situation, English teachers need to apply innovative teaching methods, such as game-based learning. This study was conducted to investigate the correlation between game-based learning application using *Wordwall* and students' writing skills at senior high school level. A quantitative study with correlational design employed where students filled questionnaires on game-based learning application and narrative writing test. Thirty-eight eleventh-graders from a public senior high school in Serang, Banten Province, participated in the study. The data collected were analyzed using Pearson-Product Moment Correlation Test through the SPSS version 27. The results showed that the $r\text{-count } 0.722 > r\text{-table } 0.320$ with the Sig. (2-tailed) $0.000 < 0.05$, indicated a strong positive correlation between game-based learning application and students' writing skills. It also revealed that game-based learning application contributed for 52.1% to the students' writing skills, while the rest were influenced by other factors which were not examined in this study. These results suggested that game-based learning application could serve as one of the potential alternative methods to enhance students' learning outcomes.

Keywords: Game-based learning; narrative text; *Wordwall*; writing skills

Introduction

As one of the four skills in English language, writing is taught in all levels of education even since the very beginning. According to Sakkir et al., (2016), writing is essentially the process of changing spoken messages into written forms. It requires organizing, shaping, and developing ideas in a way that allows the readers to clearly

understand the messages conveyed. In order to accomplish these tasks, students need to master grammar, spelling, punctuation, capitalization, and vocabulary. They also need to be able to construct strong main ideas with relevant supporting information. As a result, writing demands both creativity and critical thinking skills which are not easy to build (Melzer, 2009). Hence, students need to have much practice in order to develop their skills.

According to Harishree & Mekala, in this digital era, writing has emerged as a key in education which forms the basis for clear communication, strong critical thinking, and academic achievement (Satriani, et al., 2024). Through writing, students have chances to share their ideas, opinions, feelings, and knowledge to the readers. However, in practice, students frequently face challenges in writing, such as errors in grammar, vocabulary limitations, poor word selections, and problems with structure and coherence. As a result, writing is thought to be challenging since students need to master the other skills in order to be able to write smoothly (Mardiyah, 2016; Wulandari et al., 2022; Wulandari & Rosnaningsih, 2020).

This is in accordance with the results of prior observation and interview to the English teacher conducted in June - July 2025 at one state senior high school in Serang, Banten Province. Students found that writing activities were such boring and difficult tasks. It was not easy for them to comprehend reading texts as well as producing any types of texts learnt, including narrative text. Narrative is a kind of text that presents series of events in chronological order (Novita Br et al., 2024). It is used to entertain the readers and share moral values. Narrative text consists of orientation, complication, climax, and resolution. When writing narrative text, students need to use past tenses, noun phrases, action verbs, and sequence words.

In the prior observation, it revealed that many students face difficulties in developing their ideas and using the right features of narrative texts. As a result, their writings fell into poor category. Students' difficulties need to be addressed since writing is very important in delivering messages to others. In order to write properly, students need interesting and fun activities in the teaching and learning process. Hence, English teachers need to fully equip themselves with various kinds of methods, techniques, strategies and media that are attractive for their students.

As explained previously, the problem of writing English texts is a concern that teachers must address. If this problem is allowed to persist, it will disrupt students' academic abilities and language skills, and in the long run, students will not be able to write English accurately and appropriately. Therefore, teachers need to find alternative solutions to address these issues, so that students are able to achieve their maximum potencies in language learning.

In the 21st century, technology significantly supports the achievement of learning objectives. Technology is seen as a tool that can facilitate teachers and students in learning materials, especially English. Technology and internet have become ones of people's daily needs. Almost everyone has cellphones which are connected to the internet. Students are becoming more dependent to their

cellphones (Luh et al., 2025). Therefore, English teachers could count on cellphones to create positive impacts on education by conducting innovative activities in EFL Classroom. One of the innovative strategies in teaching writing in EFL classroom in engaging ways is by applying the game-based learning (GBL) which is accessible by using cellphones.

GBL is an innovative instructional method which integrates game elements into the learning process to enhance students' engagement, motivation, and learning effectiveness (Ongoro & Fanjiang, 2024; Razali et al., 2023). GBL employs game features to improve students' understanding and participation in learning, thereby creating an engagement and interactive learning experience (Wulandari & Safitri, 2024). It is not only intended for entertainment purposes, but rather as a carefully designed instructional approach aimed at fostering problem-solving and critical thinking skills (Setiawan, 2023).

Wordwall is one of the GBL implementations which is frequently chosen by English teachers when teaching writing. It is a web-based application which is easily accessible, user-friendly, flexible, and offers a variety of fun games and activities which increase students' engagements in learning. Teachers and students could create interesting activities by choosing some of the many templates in *Wordwall*, for example 'Open the Box', 'Match Up', 'Balloon Pop', 'Categorize', 'Unjumbled', etc. The activities could be adjusted to the learning goals of the teaching and learning process.

There have been numerous studies which examine the application of digital-GBL in English writing class. A recent study by Fauziah & Rofi'ah (2024) shows that the application of GBL could increase students' motivation and their writing skills. Further, Satriani, et al., (2024) prove that the use of gamification helps students write descriptive texts and engages them in the learning process. Another study by Manthofani et al., (2024) highlight that students who are exposed to gamification developed better narrative writing skills compared to those who are not.

Studies show that using games in learning can be helpful, but there are some important things to think about before using this method. The way games work can sometimes be a distraction. Some games might not support good teaching, make students less involved, or focus too much on following rules instead of learning real skills and knowledge. Also, playing games can take up a lot of time, so teachers need to understand how to manage their time well and keep students focused on learning.

However, there is still a lack of empirical evidence which examines the relationships between the application of GBL and students' narrative writing skills in EFL classes, especially in Indonesian context. Most of the previous studies focused on the effects of GBL in increasing students' motivation and engagements in learning activities as the addition of the students' writing skills. Hence, by conducting this study, the researchers tried to address the gap by investigating the correlation established between the GBL applied in EFL classroom and students' narrative writing skill. To be specific, this study would try to discover these following research questions:

1. Is there any significant correlation between the application of GBL and students' narrative writing skills?
2. How is the GBL implemented in teaching writing?

Based on the research questions above, the researchers formulated the research hypothesis as follows:

H0: There is no significant correlation between the application of GBL on students' narrative writing skills.

H1: There is a significant correlation between the application of GBL on students' narrative writing skills.

Method

Fraenkel et al., (2012), mention that correlation is a statistical technique which is used to examine the relationship between two or more variables. In this study, the design was used to discover the correlation between the application of GBL, as the independent variable, and students' English narrative writing skills, as the dependent variable, in senior high school level.

The population of this study was the eleventh-grade students of one state senior high school in Serang, Banten Province which consist of three science classes, namely Class XI Science 1 (40 students), Class XI Science 2 (38 students), and Class XI Science 3 (38 students). The class selected was XI Science 2, so the total samples were 38 students. They were selected using probability sampling by employing simple random sampling. In simple random sampling, everyone in the population possesses equal chances to be selected as the research participant. This technique was employed to clarify that the samples were representative and lessened the chance of bias (Creswell, 2014).

Before collecting the data, the researchers designed all research instruments. The instruments were developed in June 2025. There were two kinds of instruments employed, namely questionnaires of students' perceptions on GBL application and writing test. Before administering the instruments, the researchers first conducted the try-out of the instruments in July 2025 to 40 students who were not selected as the samples to evaluate the clarity, validity, and reliability prior to the main study including 38 students. The difference sample size was due to the students' different groups (classes), and it did not affect the validity of the study.

The questionnaires were developed based on the theory of Permana (2022) about the steps of game-based learning application. The questionnaires used Likert Scale from 1 (strongly disagree) until 5 (strongly agree) which included 25 items of statements. The students needed to select one of the numbers from each of the statement which depicted their own views about the GBL application. Below is the blueprint of the questionnaire:

Table 1. Blueprint of the Questionnaire

Variable	Indicators	Activities	No. of Item	Total
Gamed-Based Learning	Topic & materials	a. The teacher determines the topic or subject matters.	1, 2, 3, 4	4
	Supported Facilities	b. The teacher prepares the supporting facilities to achieve the learning goals.	5, 6	2
	Steps of The Game	c. The teacher is capable of explaining the steps of the game-based learning activities.	7, 8, 9	3
	Rules of The Game	d. The teacher is capable of explaining the rules in the game-based learning activities and the duration of the activities.	10, 11, 12	3
	Learning Groups	e. The teacher is capable of dividing the students individually or in groups.	13, 14, 15	3
	Game's Leader	f. The teacher is capable of facilitating the activities by leading the learning process throughout the designated time allocation.	16, 17	2
	Learning Instrument	g. The teacher administers assessments to students in alignment with their learning outcomes through the game-based learning application.	18, 19, 20	3
	Student's Achievement	h. The teacher is capable of announcing students who achieve certain ranking so that they are more motivated in the learning process.	21, 22	2
	Evaluation and Reflection	i. The teacher conducts an evaluation of the learning activities that have been implemented as a means of providing feedbacks and supporting subsequent instructional practices.	23, 24, 25	3
	Total		25	25

The questionnaires form consisted of 4 parts: (1) introduction, (2) students' identities, (3) instructions, and (4) twenty-five items of statements of students' perceptions on the application of game-based learning. To ensure the validity and reliability, the validity test was conducted by comparing the Pearson Correlation (r-count) with the t-table. If the t-table is more than the t-count, the items of the

instruments are said to be valid. However, the reliability test was conducted by using the Cronbach Alpha (α) with the following interpretations (SÜRÜCÜ & MASLAKÇI, 2020):

Table 2. Interpretation of Cronbach Alpha (α)

Coefficient of Cronbach Alpha (α)	Interpretations
≥ 0.9	The internal consistency is high
$0.7 \leq \alpha < 0.9$	The scale has internal consistency
$0.6 \leq \alpha < 0.7$	The internal consistency is acceptable
$0.5 \leq \alpha < 0.6$	The internal consistency is weak
$\alpha \leq 0.5$	The scale has no internal consistency

The results of the validity test showed that all the 25 items of statements in the questionnaires were valid, and the result of the reliability test showed that the Cronbach Alpha (α) = 0.944 which means that the instrument had high internal consistency. However, in this study, to answer the research questions, there were only 20 items of the statements in the questionnaires that were used to collect the data.

As for another instrument, writing test, consisted of 2 questions in which students were required to write narrative texts in the forms of legend. Below is the blueprint of the writing test:

Table 3. Blueprint of the Writing Test

Variable	CP-Element	Learning Objective	Question Form	Item Numbers	Cognitive Aspects
Writing Skills of Narrative Text	At the end of Phase F, students are able to effectively use spoken, written, and visual English texts across various genres to communicate appropriately according to context, purpose, and audience, demonstrating deep comprehension, critical and inferential reading skills, expanded vocabulary, and the ability to produce well-structured fiction and non-fiction texts.	Students can create both written texts and spoken presentations in the form of narrative fiction and non-fiction related to the cultural diversity of Indonesia.	Essay	1, 2	C4

In assessing the instrument of test above, the researchers employed the writing rubrics adapted from Brown (2007) and Tribble (1996). The narrative writing assessment rubrics evaluated five areas: (1) content 30%, (2) organization 20%, (3) grammar 20%, (4) vocabulary 15%, and (5) mechanics 15% with the scale from 4 (excellent), 3 (good), 2 (fair), and 1 (poor), each with its own importance. Content checks if the topic is clear and if the details are relevant. Organization looks at how complete and easy to follow the story structure is. Grammar checks how correctly past tenses are used. Vocabulary looks at the choice of words. Mechanics checks spelling, punctuation, and capitalization. Each area is given a score from very poor to excellent based on how well the writing is done.

The results of the writing test try-out showed that all items in the instrument were valid with the result of reliability test was 0.731. It showed that the instrument had internal consistency. Hence, the writing test was used in the data collection process further.

In applying GBL in the teaching process, the teacher conducted several steps. First, the teacher selected the right subjects and suitable games. The teacher also explained the basic ideas and prepares the needed tools like devices and internet. Then, the teacher explained the game rules and how long it would last. The students played either independently or in groups, depending on the task. The teacher acted as a leader or helper during the game, supporting and guiding the students. After the game played, the teacher checked how much the students learned, shared their achievements to keep them motivated, and thought about the whole process to come up with better GBL ideas for next time. All teaching process were conducted for four meetings in July – August 2025.

Ethical Consideration

This study had been approved to be conducted. The school authorities pleased the researchers to gather the data for the sake of the study. Participations were voluntarily achieved. Both English teacher and the students were assured of the confidentiality and anonymity of the data.

Results

In this part, the researchers explained the results of the research which had been conducted in July – August 2025 in a public senior high school in Serang, Banten Province. It consists of several explanations as follow.

Descriptive Statistics

Descriptive statistics were calculated by using SPSS Version 27 to both variables. From the Table 4 below, it could be seen that from 38 participants of the study, the range in GBL application was 26 with the minimum score was 65 and the maximum score was 91. The mean for this variable is 81.58 and standard deviation was 5.192. Below is the statistic table for GBL application variable:

Table 4. Descriptive Statistics for Independent Variable (GBL Application)

Variable	N	Range	Min.	Max.	Sum	Mean	Std. Deviation	Variance
GBL Application	38	26	65	91	3100	81.58	5.192	26.953

On the other hand, the range in students' writing skills was 28 with the minimum score was 67 and the maximum score was 95. The mean for this variable was 84.34 and standard deviation is 6.651. Below is the statistic table for writing skills variable:

Table 5. Descriptive Statistics for Dependent Variable (Writing Skills)

Variable	N	Range	Min.	Max.	Sum	Mean	Std. Deviation	Variance
Writing Skills	38	28	67	95	3205	84.34	6.651	44.231

The results from tables 4 and 5 indicates that students' writing skills scores were more similar compared to students' perceptions on GBL application. Further, the higher mean score in students' writing skills showed stronger performance compared to the students' perceptions on GBL application.

Furthermore, the researchers analyzed the data on the results of narrative text writing skills based on the aspects of the writing content, consisting of content, organizational structure, grammar, vocabulary, and mechanics in the table below:

Table 6. Result of Test of Writing Skills

Aspects	Content (scale 1-4)	Organization (scale 1-4)	Grammar (scale 1-4)	Vocabulary (scale 1-4)	Mechanics (scale 1-4)
Students' answers	3.5	3.4	3.4	3.3	3
Percentage	87%	85%	85%	82,5%	75%

The table 6 above shows that students' overall writing performance were medium to high achievement ranging from rate 3 to 3.5 (scale 1-4). The highest aspect with rate of 3.5 was content (87%), and then organization and grammar both with rate of 3.4 (85%), the third place was vocabulary with rate of 3.3 (82.5%) and the last was mechanics as the lowest with rate of 3 (75%). The general results indicated that students performed good writing skills while improvement was still needed especially in the aspect of mechanics (capitalization, punctuation, spelling, and other basic writing conventions).

The researchers then categorized students' writing skills using criteria adopted from Wildayati (2021) as shown in Table 7 below.

Table 7. Frequency Table for Test of Writing Skills

No	Classifications	Score Range	Frequencies	Percentages
1	Excellent	86 – 100	17	45%
2	Good	71 – 85	18	47%
3	Fair	56 – 70	3	8%
4	Poor	41 – 55	0	0
5	Very Poor	≤ 40	0	0

Referring to Table 7 above, it could be seen that most students, which included 18 students (47%), showed **good** writing skills. It is followed by 17 students (45%) showing **excellent** writing skills. Three students (8%) showed **fair** writing skills. None of the students got scores below 56. It means that there were no students of having poor and very poor narrative writing skills.

The results showed that students' narrative writing skills were majorly good (71-85), as all students participated and got better scores and exceed the minimum criteria in English subject. This positive writing results came from the application of GBL that had previously been implemented in teaching narrative text. The explainable reason may be accordingly to the students' active engagement, increased motivation, and meaningful practice during learning.

In addition, the questionnaire results based on its nine aspects, namely: topic & materials, supported facilities, steps of the game, rules of the game, learning groups, game's leader, learning instrument, student's achievement, evaluation and reflection are displayed in the following table to explain them more specifically:

Table 8. Result of Questionnaires

Aspects	Topic & Materials	Supported Facilities	Steps of the Game	Rules of the Game	Learning Groups	Game's Leader	Learning Instrument	Student's Achievement	Evaluation and Reflection
Students' answers	162	152	154	154	155	154	158	148	151
Percentage	64.80%	60.80%	61.60%	61.60%	62%	61.60%	63.20%	59.20%	60.40%

Table 8 shows that students' perceptions on the use of GBL were generally favorable in all evaluated areas, with percentages ranging from the highest on topic and materials to the lowest on student's achievement. Sixty-four-point eighty percent (64.80%) students agreed that the topic and materials were delivered well, following the learning instruments (63.20%) which were well developed by the teacher. Students agreed that teacher had made learning groups effectively by 62%. Further students agreed that the teacher implemented all steps in the game sequentially, rules of the game were explained before the game played, and that the teacher acted out as a game leader for 61.60% each. The presence of supported facilities accounted for 60.80%, the evaluation and reflection for 60.40%, and the last,

students agreed that GBL increased students' achievement by 59.20%.

Referring to the previous data, both variables had quite good and varied descriptive statistical values, so that further tests could be carried out, namely inferential statistics, that would be explained in the following part.

Inferential Statistics

In inferential statistics, the normality test is used to determine whether sample data comes from a normally distributed population. In other words, the normality test is not intended to test the substantive research hypothesis, but rather to verify the statistical assumptions underlying a particular decision in the research, including proving the hypothesis test.

Table 9. Normality Test Results

	Kolmogorov-Smirnov ^a		
	Statistic	df	Sig.
Game-Based Learning	0.140	38	0.059
Writing Skill	0.121	38	0.173

Based on the results of the Kolmogorov-Smirnov normality test in Table 9 above, it is found that GBL variable had a significance value of 0.059, and writing skill variable had a significance value of 0.173. Both of these values were higher than 0.05, which means the data for both variables followed a normal distribution. With the assumption of normality satisfied, the data was suitable for analysis using parametric statistical techniques in the next hypothesis testing, such as Pearson Correlation, to determine the relationship or effect of applying GBL on students' writing skills.

After conducting the normality test, the researchers performed the linearity test to test whether all linear regression models between the dependent and the independent variables are related to a straight line to the right or bottom right. The results of the linearity tests are as follow:

Table 10. Linearity Test Results

			Sum of Squares	df	Mean Square	F	Sig.
Game-Based Learning* Writing Skills	Between Groups	(Combined)	1281.878	15	85.459	3.142	.007
		Linearity	979.031	1	979.031	35.990	.000
		Deviation from Linearity	302.846	14	21.632	.795	.665
	Within Groups		598.464	22	27.203		
	Total		1880.342	37			

Table 10 above shows that there was a linear association between the use of GBL and students' writing skills. According to the row of Linearity, the Sig. value was $0.000 < 0.05$. Hence, it could be said that there was a strong and linear relationship between the two variables, and it was reinforced by the high F value in Linearity row ($F = 35.990$). Overall, the findings showed that when GBL was implemented more effectively, students' writing skills improved as well, proving that GBL was a useful teaching strategy for enhancing students' writing skills. These results showed that the data was also suitable for analysis using parametric statistical techniques in the next hypothesis testing, such as Pearson Correlation test, to determine the relationship or effect of applying GBL on students' writing skills.

Test of Hypothesis

In the next step, the researchers calculated the correlation analysis to determine the degree and direction of relationship between the two variables. It showed the variable association whether the two variables had positive, negative, or even had no correlation based on the statistical data. Below is the result:

Table 11. The Correlation Analysis

		GBL Application	Writing Skills
GBL Application	Pearson Correlation	1	.722**
	Sig. (2-tailed)		.000
	N	38	38
Writing Skills	Pearson Correlation	.722**	1
	Sig. (2-tailed)	.000	
	N	38	38

** . Correlation is significant at the 0.01 level (2-tailed)

Referring to Table 11 above, it can be seen that the Pearson Correlation coefficient (r-count) was $0.722 > r\text{-table } 0.320$ with the Sig. (2-tailed) $0.000 < 0.05$. The Sig. value indicated that H_0 was rejected and H_1 was accepted, which means that there was positive correlation between GBL application and students' writing skills. According to Sugiyono (2020), the Pearson Correlation coefficient indicated a strong correlation between the two variables tested. It means that the more GBL implemented, the higher students' writing skills level.

After conducting the correlation test, the researchers then calculated the coefficient determination. Referring to the result of the SPSS Version 27 calculation, the coefficient determination is shown in the following table.

Table 12. The Coefficient Determination

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.722 ^a	.521	.507	5.004

- a. Predictors: (Constant), GBL Application
- b. Dependent Variable: Writing Skills

Table 10 above showed that the r-count was 0.722 with the r square was 0.521. It means that GBL application gave contribution to the students' writing skills for 52.1%, while the remaining 47.9% was influenced by other factors which were not examined in this study.

Discussion

The use of games in learning has become more interesting subject of studies lately since it serves as an innovative method in creating engagement and students' enjoyable learning experiences. GBL provides an immersive and enjoyable situation for students through incorporating elements of the games, like challenges, competitions, achievements, and interactivity into the learning activities. Hence, games are able to motivate students to actively engage in the learning process because of their ability to create more enjoyable learning situation. Interactive and meaningful learning experiences are also effective in drawing students' attentions in the classroom sessions (Ananda et al., 2024; Einsthendi et al., 2024; Srimuliyani, 2023)

The enjoyment situation created through the GBL application may be caused by the more relaxed learning situations in the classroom sessions. Hence, when learning through games, students do not view learning as a burden, yet it is a fun activity. Games also facilitate students to have individualized learning experiences. Games allow students to control their own pace, difficulties levels, and the overall learning experiences. Therefore, students are able to adjust their learning styles and preferences into the learning activities (Pinto et al., 2022).

Further, games could strengthen collaboration among students so as to promote teamwork and enhance social interactions. The competitive elements of the games also increase students' motivation that is able to improve their performance. However, it is worth noting that the impact of the GBL application relies on the appropriate subject matters with the designs of the games and the role of the teachers in guiding the learning process and bridging students' engagements during the process. Through paying attention to the challenges and opportunities, the GBL application has its potencies to transform conventional learning paradigms into more engaging, meaningful, and adaptive students' learning experiences (Rezeki, 2024).

In order to achieve its best potency, before incorporating games into the learning activities, teachers are required to identify the learning objectives, select appropriate contents, and determine students' needs. The game-based learning application involves introduction to the games, providing vivid instructions to the students, and monitoring their progress throughout the activities. Then, teachers could focus on the comprehension of the learning contents in which the learning

materials are integrated with the game elements. Following the game, there would be explanation and discussion to ensure students' understanding of the topics of discussion (Permana, 2022).

Feedbacks also play important roles in the GBL application. Right after the games played, students receive instant feedback through the use of the games. In this case, the feedback provides information on their performances and areas that need to be improved. Reflection and evaluation at the end of the learning session involve reviewing the experiences students have in playing the games and assessing their effectiveness. Through the use of the games, students are able to have fun in learning (Sitorus & Santoso, 2022).

In the application, the use of games in learning activities has proved to assist students in improving their writing skills (Darma et al., 2025; Fatima et al., 2020). One of the applicable games in the writing class is *Wordwall*. It offers easy and wide range of creative activities and templates to be adjusted to the students' needs and learning objectives. Through its lively games and fun quizzes, it keeps students interested and encourages them to be more involved in the learning activities. By incorporating *Wordwall* into the learning activities, teachers are also able to create an interactive and more engaging atmosphere that supports the improvement of students' writing skills (Amri & Sukmaningrum, 2023; Darma et al., 2025; Fatima et al., 2020; Nenohai et al., 2022).

The results of this study, as shown in the previous section, indicated that there was a positive high correlation between the two variables tested, namely GBL application and students' writing skills. This means that the greater engagement with the GBL application, the higher the writing skills levels of the students will be. The GBL application had proved to create more enjoyment and increased students' motivations and engagements in the learning process. Hence, it successfully increased students' writing skills (Castillo-Cuesta, 2022; Fahira & Kemal, 2024; Gita Suryani & Gede Yoga Permana, 2024).

In this study, the GBL application had proved to give contribution to the students' writing skills for 52.1%, while the remaining 47.9% was influenced by other factors which were not examined in this study. The unexplained factors might come from students' internal and external factors in learning, such as self-motivation, self-confidence, language proficiency and learning strategy which may have possible effect on their writing skills. Other contextual variable such as learning environment in school or home also might have indirect effect on student's cognitive ability to write. The accessibility of learning materials in English and access to English media will also be very supportive to students' foreign language learning. The 47.9% variance unexplained shall illustrate the complexity of contextual factors in second language writing performance and indicate more room for research to investigate these factors further.

To conclude, this research results suggested that the GBL application by utilizing the *Wordwall* application could become an alternative innovative strategy in teaching writing as its ability to increase students' writing skills through enjoyable activities. However, English teachers have to make sure that the facilities available at school should support the application of the games, and the games used support the achievements of students' learning outcomes.

Conclusion

In this digital era, GBL has emerged as one of the innovative alternatives in education that utilizes affordable and easily accessible devices, namely mobile phones, as long as they are connected to the internet. GBL is able to attract students' attention, active participations and motivations which then increase their knowledge and skills. One of the proves is from the finding of this study which indicated that there was strong positive correlation between the implementation of GBL by using *Wordwall* application and students' narrative writing skills at senior high school level.

The results of correlation analysis showed that the $r\text{-count } 0.722 > r\text{-table } 0.320$ with the Sig. (2-tailed) $0.000 < 0.05$. This indicated that the greater students engaged with the GBL application, the higher their writing skills levels would be. Further, referring to the hypothesis test, it could be found that the GBL application contributed for as much as 52.1% to the students' writing skills, whereas the 47.9% remaining was affected by other factors which were not examined in this study. Although the GBL application had proved its benefits, this study still had experienced several shortages, such as the limited numbers of the participants and limited time in conducting the study. As a result, the researchers could only examine one application of GBL.

In addition, in order to get the maximum benefits from the GBL application in English language teaching, teachers are required to take students' needs and preferences into account in the learning process while also paying attention to the materials and learning objectives. Further, both the teachers and the students have to be familiarized with the wide range of GBL applications that could serve as the enjoyable learning experiences in the classroom sessions. The adequate facilities, including the devices and access to the internet are essential in supporting the integration of games into the learning process. The next researchers could discuss further with the English teachers of how to integrate the learning process utilizing wide ranges of online games available freely.

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