THE EFFECTS OF KAHOOT! IN TEACHING READING TO TENTH GRADE STUDENTS

Dismas Wibisono[5](dismaswibisono@gmail.com)

Abstract

Side-synchronizing between English reading teaching and learning and latest technology are encouraged to happen nowadays to get better learning achievements. The purposes of this study were to identify the effect of Kahoot! in reading comprehension test scores. This study was carried out among 50 students from a senior high school in Surabaya. Data were analysed and presented using descriptive statistics in the form of frequency, means, standard deviation and independent t – test. From this study, it was found that the students' reading comprehension test scores were higher when they were taught using Kahoot! on the learning process. Besides, their learning attitudes on cognitive, psychomotor and affective showed some significant positive effects. From these findings, it can be suggested that online media like Kahoot! Is strongly recommended to be used in the teaching and learning process of English reading. It is expected that the finding of this study would enlighten the relevant literature of the area.

Keywords: *Reading Comprehension, Online Media, and Kahoot!*

1. Introduction

Learning English nowadays has been one of the most important parts in almost everything in our daily life. In particular, learning English itself can be executed everywhere. However, educational institutions or schools conduct the learning process by focusing more on pedagogical and

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[5] *Author is a graduate from Graduate School of Widya Mandala Catholic University Surabaya*

comprehensive approaches. Sadly to say, nowadays, some English as a foreign language students have been long suffering difficulties in understanding and applying English well. with regard to this, even though the notion of integrating reading and writing in L1 setting as well as L2 literacy in education is not new; not only until recently has the reading-writing connection received enough attention and been implemented in the teaching of L1 and L2. David (2007) said that English is an irregular language that in fact makes difficult to learn for non-native learners and this is also hard to teach as well. Thus, it is important especially to the students in this era who have high level of motivation to learn the materials in a fun way. In addition, the engagement and motivation of the students have been the obstacles in teaching English to students who are applying it as a foreign language. Moreover, in some schools, the classroom where the delivery of the materials is considered old-fashioned and repetitive will have bad impacts on the students in the future. Thus, integrating education and entertainment are widely observed over the last few decades as an innovation to increase student motivation. Zala'i (2006) remarked that the combination of both learning and entertainment called "edutainment" is now being used as a media to educate students better. In the United Kingdom, for example, David (2007) conducted a research study that uses a game approach in delivering the materials. It was found that it could increase the students' motivation and enjoyment in achieving their aspirations or scores. Therefore, this study was conducted to identify the effects of Kahoot! in students' reading comprehension test scores.

1.1 Research Problem

According to some identified facts in the researcher's classroom, it was found that the student motivation to read was low and the result of the reading comprehension test in the traditional classroom setting was still under the expectation of the school, the writer who was also an English teacher of the senior high school wanted to apply an online media to

identify the students' scores in reading comprehension after implementing the online media called "Kahoot!" in the classroom and the effects of applying the online media in the classroom on the students' reading scores.

1.2 Reading Comprehension

Reading is a complex "cognitive process" of decoding symbols in order to construct or derive meaning that can be used as a means of language acquisition, communication, and sharing of ideas and information. A job of a good reader is not just to think about the contents written by the writer but also the messages leading to some possible complex areas of the writer so that the contents and messages on the text will be collected and stored into the students' schemata. In the reading process, schemata and language skills must be used to reveal the message of text read by the reader (Mikhailov, 2001).

Shanahan (2005) said that the comprehension that occurs on someone' reading process is a result of the filter used and gathered from their foundation of knowledge and belief; moreover, the well-structured text of the writer should also exist to think about the information read and make inferences about the author's message. According to those two perspectives, it is good to have a text consisting language inputs contributed to the students' schemata, messages, and contents in compliance with good knowledge and belief to enhance the readers' reading comprehension.

The findings from Mikhailov (2001) and Shanahan (2005) are supported by *Filter Hypothesis Theory* from Krashen (2009). When the process of reading comprehension and the variables are applied by learners, the success of learning, specifically on reading can be real. It means that the objectives in teaching and learning subject matters can be achieved because the filter on the subjects is on. It refers to the teaching and learning process happening in the classroom or certain place.

1.3 Online Media

In order to get students' attention on reading texts which have so many words but only several pictures, the teachers must have a media to encourage them. This fact is then supported by a study conducted by Wells (2011) saying that games, in the process of teaching and learning of the language subjects especially, can affect dramatic change in on-task behavior as well as word acquisition and content understanding. As a media of learning, games can also be completed online as it can also use the multiple formats for presentation of information, including text, motionless or animated, pictures, movie segments, video clips, and audio information (Qiu & Bai, 2013).

The evidences from the findings above are strongly related with *Behaviorist Theory* proposed by Parkay (2000). The theory emphasizes that changes in behavior that come from stimulus-response are supported by the findings above which show both online and offline activities such as games as the stimulus show meaningful correlations on the responses.

1.4 Kahoot!

The use of technology in foreign language teaching and learning is beneficial for both teachers and students because, according to Altun (2015), the researcher said that the use of technology in the teaching and learning process will improve the quality and experience in that process which can also be a media that can facilitate and support the process resulting in a great deal of advantages. However, it is also mentioned that combining the technology in the classroom must be accompanied with a good planning so that the learning will be meaningful and the class participation will authentically appear to build students' motivation and improve their scores.

In this digital era, there is a term namely "Web 2.0" which is about the second generation of the Internet, which is more active and user-friendly. There are kinds of them such as Prezi, Google Doc, and Kahoot!

Siegle (2015) defined Kahoot as an online game that can test the knowledge of the students on English reading skill. Even though it is a simple free multimedia online media for both teachers and students, the character is limited up to 95 for questions and 60 for answers. This quiz maker media containing various media such as pictures or videos which can be limited for its time to answer the questions provided. The application can be accessed through laptops, smart-phones, or other others.

Besides the findings from the research studies above, *Connectivism Theory* by Siemens (2005) shows its relevance on them. It was proven that some relevant elements such as theories, social structures, and technologies help learners empower themselves in attempt to explore knowledge because that is on of the many ways of learning in this era. Thus, letting the students try their way of learning with teachers' new way of teaching is highly recommended as from the students' perspective. They may correlate their styles with their new knowledge; shared and taught by the teachers and from the teachers. They can apply a new learning model so that they can be triggered to be more adaptive with the latest technology of teaching.

1.5 Significance of the Study

This study has several practical and theoretical contributions. The aim of this study is to describe the effects of Kahoot! in teaching reading on tenth grade students at Gloria 2 Senior High School.

Practically, the data and information obtained from this study are expected to provide useful contributions for English students, instructors and future researchers. The result of the research is then expected to be a basis to decide the use of Kahoot! in reading learning comprehension for English teachers who choose reading as the material to be taught at particular time.

Theoretically, the findings of this study may also provide additional insights concerning the teaching of English reading skill and its

experience on the use of edutainment methods at the secondary level. Moreover, this research was held to support the underlying theories so that the data could give more supportive data on the theories.

1.6 Assumptions

This study is based on several assumptions. The first assumption is that there is a reading material to be taught to support English learning on one of the four skills. It is also assumed that the teacher knows what Kahoot! is and how to use Kahoot! to teach the students in the classroom. The last assumption is that the teacher is an English teacher so that particular learning objective on learning reading is achieved.

1.7 Theoretical Framework

Some theories are applied to analyze the process and result of the research. The first theory is *Affective Filter Hypothesis Theory*. Krashen (2009) defines this theory on its emphasis regarding its variety of affective variables to success in second language acquisition which is leading to motivation, self-confidence and anxiety. They are related in a way that the students might be able to accomplish the learning objectives by the application of those three aspects. The first theory is applied to help relate a theory called *Connectivism Theory*. Siemens (2005) states that the account of trends in learning with the use of technology and network, and the diminishing half-life knowledge, which combines relevant elements of many theories, social structures, and technologies to create a powerful theoretical construct for learning in this advanced digital era, helps learners to empower themselves to explore the knowledge more because they are doing the learning by using their way of life nowadays. When the technological and psychological aspects are applied, the effect on learners must also be adapted and applied. Thus, *Behaviorist Theory* is also applied. Parkay (2000) emphasized on the changes in behaviors that come from stimulus-response associations made by learner. The theories above were

used to support the investigation of the effects of edutainment in teaching Reading at Gloria 2 Senior High School Surabaya.

1.7 Previous Studies on the Use of Online Media like Kahoot!

There have been some studies related with the implementation of online medias like Kahoot!. Su (2015) has investigated the effectiveness of the use of gamefied approach to influence science learning. The study employed three classes of Taiwanese students, all taught by the same teacher and divided into two groups: a control group and an experimental group It was later shown that using a gamified technology to teach science topics improved the learning performance and student motivations resulting in a good level of achievement upon the expected scoring standard.

Another study that supports the use of this method was reported byYip (2006). Their study focusing on 100 students, who used web-based vocabulary instruction that included games, found that the experimental group outperformed the control group on the vocabulary posttest which results in a suggestion that Kahoot! may be an effective media for vocabulary instruction and to improve the students' motivations and results.

Another study is written by Wang (2015), who did the study on 126 university students by using two cases which were about (1) applying the Kahoot! once after 45 minutes lecture and (2) applying the instructional media at the end of each and every lecture for the whole semester. It was later found that 57% of the 126 students who participated in the study said that they would continue playing Kahoot! after every lecture and 75% of the students felt that they learnt something from playing the use of the app.

Similarly, Damara (2016) agrees this by reporting her research conducted to 66 students of Movie Interpretation class that Kahoot! was also beneficial for ice breaker because it was so interactive and able to increase the students to learn materials deeper in Movie Interpretation

subject. In addition, the design and template of the app are simple, even for informal occasions.

The latest research conducted by Bicen (2018) found that the interest and ambition of 65 undergraduate students studying at the Department of Preschool Teaching increased the interest of the students in the class, as well as their ambitions to succeed. In addition, this method was also found to have a positive impact on the student motivations. Furthermore, the results of this study indicated that the Kahoot! application can be used effectively for gamification method.

According to the studies above, the studies have indicated that online media like Kahoot! can be a good method to teach any English subject matters. Especially, the last two studies have shown that Kahoot! can be used in the area of teaching and learning language skills. After discussing the positive references in regard to the use of Kahoot! above, the writer expects to have same good results, but in a different area of English skill, namely Reading. In addition, the participants are also different, which may later result in different findings. The writer is then concerned to be willing to help senior high students to enhance their motivations and scores in Reading.

2. Research Methods

This study employed a quantitative research design as it was aimed to investigate relationships between the variables and look for explanations on the basis of such relationships. Apart from that, this study also adopted a correlational research design to collect the data about the relationships between the two sets of variables determined.

2.1 Sample and Population

As the research was conducted in a senior high school, the range of the subject populations were about the students on the 10th, 11th, and 12th grades. However, the students in the X Science 3 and X Science 4 classes

were intentionally selected as the sample of this research. Thus, purposive sampling methods were applied in determining the samples. The pre-tests conducted by the school stating that the X Science 3 students had a lower average of result than that of the X Science 4 students. The writer decided that the X Science 3 class to be used as the experimental group with the implementation of the Kahoot! App, while the X Science 4 was the control group with the implementation of a Jigsaw teaching technique.

The treatment procedures for each group on this study that were used to improve their reading comprehension scores involved:

Experimental Group	Control Group
1. The texts were provided by the researcher for the teacher. 2. A pre-test was conducted. 3. The teacher asked the students to understand the passages in groups to let the students understand the passage. 4. After the passages were understood, the the implementation of Kahoot! was the next step in the learning process. 5. The scores were observed. 6. A post-test was conducted afterward 7. The pre-and post-test results were analyzed.	1. The texts were provided by the researcher for the teacher. 2. A pre-test was conducted. 3. The modified jigsaw was applied. The students were assigned to gather in four groups to understand each part of the full reading passage. Then, one representative was sent to explain each part. However, all of the members of each team should understand the contents individually. 4. After the passages were understood, the problems were discussed classically. 5. The scores were observed. 6. A post-test was conducted

Experimental Group	Control Group
	7. The pre- and post- test results were analyzed.

2.2 Instrumentation

In collecting the data, the researcher used instrument for the reading comprehension test in the form of multiple matching which was modified into multiple choice to adjust the application between the standard in Kahoot! and IGCSE for English. The tests had ten questions.The IGCSE test for English only has four passages, thus the options in the Kahoot! app had four letters were constructed based on the related passages. Some of the test items were also best-designed and developed by the researcher accordingly with the title chosen so that the items developed were able to provide the answers needed.

2.3 Teaching Materials

In order to complete the study, the contents of the reading comprehension materials which are based on the IGCSEs standard with the collaboration with the CEFR standard (Common European Framework of Reference for Language) were prepared. It was developed based on the syllabus 0510 that divided the test into Core and Extended classifications. However, the test administered was the Extended one. This component forms part of the Extended version of tier assessment of IGCSE English as a Second Language and tests the following Assessment Objectives (AO):
AO1: Reading
R1 understand and respond to information presented in a variety of forms
R2 select and organize material relevant to specific purposes
R3 recognize, understand and distinguish between facts, ideas and opinions
R4 infer information from texts

From the CEFR side, the level of the appropriate student' reading comrehension level was B2 which covered the following skills:

- ✓ Students can understand the main ideas of complex text on both concrete and abstract topics, including technical discussions in his/her field of specialization.
- ✓ Students can interact with a degree of fluency and spontaneity that makes regular interaction with natove speakers quite possible without strain for either party.
- ✓ Students can produce clear, detailed text on a wide range of subjects.
- ✓ Students can explain a viewpoint on a topical issue giving the advantages and disadvantages of various options.

After identifying the above standards, both the reading passages and questions were designed accordingly.

2.4 Methods of Data Collection

The data was collected during the 2018 academic year in a period of one month. The teacher and students in the school were informed of the study and its background reasons. This study was conducted at SMA Kristen Gloria 2, Surabaya. The researcher had several discussions on the steps to do by the teachers for both groups. After the teacher had understood what to do, the application on both groups was executed. Firstly, the pre-test was conducted for both groups. Then, it was found that all the group members had different ways of learning. At last, both groups completed the post-test. The results of the post tests were calculated and analyzed accordingly. In addition, the writer's observation was included.

2.5 Instruments

In collecting the data, the researcher used an instrument for the reading comprehension test by using multiple matching which was modified using multiple choice test questions to adjust the application standard in Kahoot! and IGCSE for English. The tests had ten numbers for

the questions. As Kahoot! could provide options, but the IGCSE test for English only has four passages as the source options, thus the options in Kahoot! related to the passages discussed. Some of the test items were also best-designed and developed by the researcher accordingly, with the title chosen so that the items developed were able to provide the answer needed for the research question.

The materials and exercises were selected and developed in line with the objectives of the IGCSE standards. The materials selected covered Assessment Objectives for Reading (AO1) that were applied in multiple matching exam style part. Each reading part covered 10 (ten) test items. The specification of the tests and exercise was presented in Table 3.1.

Table 2.1. The Specifications Table of the Tests and Exercise

Assessment Objectives for Reading (AO1)	Questions Type		
	Multiple Matching Items		
	Pre-test	Kahoot! and Jigsaw text	Post-test
R1: understand and respond to information presented in a variety of forms	(1), (3)	(2), (4), (6)	(1), (4)
R2: select and organize material relevant to specific purposes	(2), (4), (8)	(1), (3), (7)	(2), (3), (5)
R3: recognize, understand and distinguish between facts, ideas and opinions	(5), (6), (7)	(5), (9)	(6), (7), (8)
R4: infer information from texts	(9), (10)	(8), (10)	(9), (10)
No of items	10	10	10

2.6 Methods of Data Analysis

In order to ensure the data analysis was smoothly run, the data was computed using a web calculator to provide the data in the form of related statistical measures including the means, standard deviation and independent sample t – test which was later described and added by the observation results done by the writer.

3. Results

3.1 Result of Students' Reading Tests' Scores' Analysis

T-test analyses table

	N	Df	M	SS	s²
Kahoot!	25	24	98	400	16.67
Jigsaw	25	24	94.4	816	34

The next calculation was done as the following:

T-value Calculation

s2p = ((df1/(df1 + df2)) * s21) + ((df2/(df2 + df2)) * s22) = ((24/48) * 16.67) + ((24/48) * 34) = 25.33

s2M1 = s2p/N1 = 25.33/25 = 1.01
s2M2 = s2p/N2 = 25.33/25 = 1.01

t = (M1 - M2)/ (s2M1 + s2M2) = 3.6/ 2.03 = 2.53

From the data above, the t-value is 2.53 and p-value is .007394. The statistical analysis revealed that the effect on the use of Kahoot! is significant on particular senior high school students grade ten (X) (where, $t(24) = 2.53$, $p<.05$). The data that has been shown above are numerical. The correlation between the data and the two tail hypothesis is required so that the data can be more valid for its approval to be applied in the future.

Before the explanation is given, the null hypothesis (Ho), which is about Kahoot! shows a higher level of good effect on the outputs of the teaching and learning of Reading. Next, the alternative hypothesis, which is about the use of Jigsaw in the teaching learning process, is required to be explained.

Based on the statistical calculation, we cannot reject the null hypothesis because the score is -0.75 (within the non-rejection area). The explanation is that the 2 critical values (cutoff points) are -2.064 and 2.064, since -0.75 is between -2.064 and 2.064 and below 1 so we cannot reject the null hypothesis. On the other hand, the writer rejects the alternative hypothesis because the score is in the range of the null hypothesis.

3.2 Discussion about Field Observation

Based on the observations held, there are several results that come up during the observation time. They reveal the impacts and the details that lead us into certain conclusions.

Table 3.1

Table on the Comparison between the use of Kahoot! And Jigsaw in the classroom

Kahoot! Based	Jigsaw based
1. The enthusiasm came up when the phones/gadgets were set to login in the game. 2. The discussions of each test items and the answers happened communicatively between the students and teacher.	1. The students were mostly focused on the instructions of the teachers with less enthusiasm from each of them. 2. The interactions between students and teacher were built formally in two way communications.

Kahoot! Based	Jigsaw based
3. As the numbers of gadgets/phones were limited for one gadget/phone for each team, the students learned how to share the happiness in discussing the game with no meaningful disagreements because they were limited by the time to answer each of test items.	3. Only some of the students paid attention to the teacher while others did not put their attention to the learning process.
4. Almost all of the members were in competition in showing what they had in mind after the answers were selected through their gadgets/phones.	4. Some of the active students were active to respond the teacher's questions regarding the discussion of the test items.
5. It took a longer time than the usual discussions because both the students and teacher needed time to prepare the internet connection for the computer and the gadgets/phones.	5. The discussion was short in time because the students' responses were limited based on the passages that they had.

From the observation notes shown in Table 4.3, there are several conclusions to draw:

(1) As an online media, Kahoot! made enthusiasm be real in the teaching learning process compared to the Jigsaw one which let the students focus on the teacher's instructions without feeling the real nuance of the lesson; (2) interactions were built more formally in the Jigsaw technique

but the class which used Kahoot! had more frequencies in interaction; (3) by using Kahoot!, the students could learn how to socialize because they shared the use of the phones/gadgets in each group happily were and able to help their friends who did not understand the answers and how to find them while the control group led the students to be more individualistic because they only cared with their own part without knowing whether their friends understood the materials and how to find the answers or not; (4) the students who used Kahoot! had more competitive feeling to be shown compared to the control group because the experimental group was observed to be more active in responding in the discussions led by the teacher; (5) the experimental group took a longer time, because the students and teacher needed to prepare for the explanations and the networking so that the teaching and learning could run well compared to the control group which had nothing to be prepared by the students.

Considering the results of the observation result, it could be summed up that learning reading comprehension using online media such as Kahoot! has more positive effects both cognitive, psychomotor, and affective aspects to lead the students' reading comprehension better by making them be more active in mind. The process of learning also results in the students' better understanding and readiness to do the real test.

3.3 Discussion of Findings

In relation to the studies previously discussed about Kahoot!'s applications within the teaching learning process, the writer finds good correlation. Yip (2006) found that the vocabulary posttests outperformed after the use of Kahoot! in the teaching and learning process resulted in the conclusion that Kahoot! may be an effective media for vocabulary instructions and students' motivation and results. Wang (2015) and Bicen (2018) had almost similar studies on their university students' motivations and lectures which were a great success to prove that the positive impacts on gamification through Kahoot! and willingness to explore more on the

lecture are already there. The last study by Damara (2016) showed that Kahoot! was beneficial to increase the students' motivation in learning the materials by using Kahoot! as the ice-breaker.

Comprehending the results of the studies done by the previous researchers and applying the Kahoot! in this study, it can be concluded that the positive effects on Kahoot! are in line with the previous studies. The discussion on this previous studies' correlation has been closed with the similar results that support Kahoot! as one effective online media to teach and learn something with a simple understandable template for even a newbie on this sophisticated era.

4. Conclusion and Suggestions

4.1 Conclusion

It can be stated that the question: "will the use of online learning media called "Kahoot!" be effective for improving the reading comprehension scores of senior high school English learners compared to Jigsaw teaching technique?" has been scientifically proven on the study results. The online learning media called "Kahoot!" is effective to improve the reading comprehension scores compared to Jigsaw teaching technique. The evidence are seen from the reading pre- and post-test scores with the analysis and the qualitative explanation on those two groups show that this research has proven the question and given detailed evidences to support the effectiveness of this online learning way of teaching.

4.2 Suggestions for (English) Teachers

As the writer is also a teacher, specifically English teacher, the writer agrees that all teachers have their personal ways of teaching. However, being an adaptive teacher is also recommended, because the major demand of the government and schools is focusing on the development of teaching kits, specifically on the teaching media which uses computer or other digital sources. Some senior teachers are suggested to

enhance their teaching strategy which is adapted using the recent digital sources because they are easier to use and require a small effort to do the scoring as the scores are calculated automatically by the system. Specifically for English teachers, it is suggested to blend the teaching and learning process with technology, because English as the lingua franca must also have the application on the worldwide s application, especially in the technology which keeps improving for its purpose.

4.3 Suggestions for Applying the Technique by Using Online Media

This online media may be used effectively under the following conditions as the following. Firstly, the students can use the online media if their phones have been upgraded and suitable for the latest flash player for Android/iOS or other operating systems; if it does not have one, they can download it from the internet for free. Secondly, the students should learn the materials carefully, read the passages seriously, and answer all the exercises carefully, not by doing "trial and error" or eliminating the possible answers to get the correct answers without understanding them well even the options sometime are given. The last is that the students may access the link to learn at home or somewhere else which has a good internet connection.

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