

THE EFFECT OF USING COMPUTER-ASSISTED READING WITH INQUIRY-BASED LEARNING ON STUDENT READING COMPREHENSION

Zakiyuddin*

Mutmainnah Mustofa

Muhammad Yunus

Universitas Islam Malang, Malang, Indonesia

ABSTRACT

This study aims to determine whether there is a difference between students who read using computer-assisted reading and those who read using other means in terms of reading. The sample was 23 students studying at two senior high schools in Sumenep, East Java, Indonesia. They were selected from student representatives based on their English language skills. The experiment was divided into six stages which include learning and testing. The researchers used lexical-tutor where there are audio-assisted reading, concordance, and online dictionary. For the learning process, researchers use inquiry-based learning, which focuses on student activity. To determine whether there is an effect on reading comprehension, the researcher used a paired sample t-test and an independent sample test to determine whether there is a difference in student reading comprehension score using an inquiry-based computer aid with those who do not use it. Based on the results of the study, there is no effect and no difference between reading using computer-assisted reading with inquiry-based learning and those who did not use computers. When viewed from individual scores, the results of the study showed little progress. The results of the observation show that not all students like to read while listening to audio.

Keywords: *computer-assisted reading, inquiry-based learning, reading instruction*

* Corresponding author, email: vegeancezacky89@gmail.com

INTRODUCTION

Technology can be used as a tool to solve a problem or do a job. Most humans cannot be separated from technology in terms of their daily activities. Wu (2019) did a survey of 235 students in Chinese regarding online tools of their selections. In his finding, the students did the listening, reading, watching TV, social media, text chatting, voice messages, video chatting, website. All of them show that student activities can not be separated with the use of technology.

This shows how significant is the technology for human development. According to Afandi, Junanto, and Afriani (2016), the increasing development of technology resulted in changes in education. The changes were not only in the curriculum but also in pedagogy. In this situation, we must be sensitive in progress. However, the development of internal education in Indonesia in the use of technology is still not evenly distributed because some areas of Indonesia are classified as isolated (Syamsuar & Refliantor, 2018). It causes a sizeable disparity between urban and rural areas.

Technology has the way to be interesting in the learning process with the features provided. There are several concepts about online learning. Some can be said to be mixed (hybrid) and entirely done online. Essentially mixed online learning combines face-to-face and online classes (Hrastinski, 2019). According to Yunus, Salehi, and Chenzi (2012), in online learning, the students capable of educational technology could benefit from their involvement. Focusing on student needs and developing language learning are the essential characteristics of online learning (Pourhossein Gilakjani, 2014).

Technological developments also affect language learning, such as the use of computer-assisted language learning. The use of computers in language learning is foremost for learners and teachers that computers can handle some activities with applications (Yusniarsi, 2019). Another statement from Kunlun (2007) is that the use of computers in learning reading provides a new color in the learning process and can increase interaction between students and teachers, and if designed carefully, computer-based learning can increase interaction in learning.

For the success of learning, teaching styles can also affect the degree to which teachers use technology in the classroom. DePotter (2009) said that learning style acts as a filter for the learning and communication process. In addition, the learning style is the process of

receiving and processing each individual towards the learning he receives.

The transmissionist teaching style sees "the teacher as the source of knowledge and the students as passive recipients of knowledge" (Teo et al., 2008, p. 165). This is in contrast to a constructivist teaching style, which emphasizes student-centered learning that promotes independent learning and student meaning-making (Teo et al., 2008). Online teachers are only facilitators in an online class, not information givers. Of course, students are given space for discussion and class activities (Riasati et al., 2012).

One of the learning processes that offer student-centered learning is inquiry-based learning. Inquiry learning also emphasizes ideas, questions, observations, analytical, critical, systematic. In inquiry learning, education plays an active role throughout the learning process by building a culture in which ideas are challenged, tested, defined, and move students from the questioning process to the dominant position of understanding (Scardamalia, 2002).

According to Sanjaya (2008), inquiry-based learning strategies are several learning activities that emphasize the process of thinking analytically and critically about how to find the answer to a problem created by them. One of the inquiry-based learning characteristics is a method that prioritizes and requires teachers to help students find their data, facts and information from several sources (Ahmad, 2011). In another definition, an inquiry-based learning is a learning process that seeks truth and information, and understands and uses all of them in this phase of life. The foundation of this learning is that both facilitators and students have and share responsibility for learning. Inquiry-based learning is effective, but there are some things to note that this method will be very useful for solving problems.

Inquiry-based learning process also trains students to find their concepts. In the learning of reading, there are several concepts such as reading aloud or silently, and there is also reading accompanied by audio or what we call audio assisted reading. In addition, concepts such as providing concordance where there are several sentences to make it easier for students to understand the unfamiliar vocabulary.

There is Computer-assisted reading where students can find their reading concepts. Then, the integration of inquiry-based learning and computer-assisted reading helps students to find the concept of reading their English text because, in computer-assisted reading, there are audio-assisted reading which is suitable for those who like to listen rather than

read, concordance is good for interpreting the meaning of a text and can help students to memorize it. Finally, an online dictionary where students can look up the meaning of words they do not know. The features available in computer-assisted reading can help students learn to be student-centered learners. In addition, computer-assisted reading that can train students to become autonomous learners is certainly compatible with inquiry-based learning based on student-centered learning.

Texts used for computer-assisted reading are taken from the corpus, that is written or spoken texts stored in a computer. This website is created by Tom Cobb from Quebec University in Montreal, Canada. He aims to provide some resources for English and French language researchers, learners, and teachers. The features are Text-to-speech (audio-assisted reading), concordance, and an online dictionary provided in lexical tutor (<http://www.lextutor.ca/hypertext>). We can click on one of the texts provided to generate sound and use secondary clicks or double clicks to show the concordance. The Compleat Lexical Tutor also provides an online dictionary to assist students' understanding. Besides, corpus in Lexical Tutor can help students select many authentic texts in web-based. For the other web-based reading programs, which are interesting, influential, and inspiring, students can find them in other sources (Yang, 2010).

Cobb et al. (2001) has conducted a study of vocabulary with a series of French online resources using computer-assisted, and other researchers must focus on reading. In his research, Cobb (1999) stated that when students find words in various contexts, they will retain the words they find and will use them flexibly, and according to Folse (2004), the importance of giving students new words with explanations or explanations of new words that students find so that the words will move from short term memory to long term memory and this is what Tom Cobb said.

From all previous research that focused more on vocabulary aspects, it is necessary for further researchers to focus on reading. This kind of study will be on English research that focuses on the use of computer-assisted reading.

Mina and Glenberg (2004) stated that the visualization and verbal strategy have helped students with problems in the comprehension process and assisted their comprehension. Therefore, this study aims to experiment with computer-assisted reading on students' reading comprehension at one of the high schools in Indonesia.

LITERATURE REVIEW

The Teaching of Reading

In teaching reading, teachers can use several different strategies depending on whom they are teaching. Teachers who teach must understand the principles and some basic assumptions in each particular technique. According to Harmer (2007), strategy is an action that an educator must possess to be able to achieve one or more teaching and learning objectives. Strategy can be concluded as a set of guidelines for the learning process. Educators or teachers should use several strategies in learning, especially in teaching reading. It can be in the form of media, a game so that students can enjoy and catch what teachers teach.

Based on research conducted by Muslaini (2017), teachers who use multiple strategies can help students pass the final exam with a mean score of 75. Slavin (2000) argued that effective strategy is not just transferring knowledge to others, but teachers should realize that teaching reading can be taught using many strategies.

Audio-Assisted Reading

This feature is improved as a tool to assist students with listening comprehension by giving more access to identify the letter-sound relationship (McMahon, 1983). Reading with audio can be used as an effective intervention for students with learning disabilities (Gilbert, Williams, & McLaughlin, 1996) and partly for readers who have difficulties (Koskinen et al., 2000).

Yang (2010) stated that text-to-speech is one of the good features to help students understand the reading text. In another opinion, Text-to-speech (audio-assisted reading) software can improve the reader's phonemic awareness and can make the reader quickly understand by the reading monitoring and acoustic form (Chen, 2011).

Based on KOTESOL Proceedings 2017 as cited from (Woodall, 2010), audio-assisted reading has some benefits are:

1. It can give interest to audio-lingual learners
2. It can develop four language skills, namely listening, reading, writing, and speaking
3. It can provide more references

Students who are taught to read with audio-aided reading have significantly better reading skills (Askildson, 2011). The other study also comes from Amer (1997) that the student given audio-assisted reading outperformed those who were only silent reading

Concordance

Another feature of RA reading that is available is concordance. According to Peachey (2005), concordance is software installed on the computer whose function is to analyze the language of the corpus. By concordance, the students have a chance to do the analysis and can expand their contextualizations.

There are two proponents of concordance-assisted reading, according to Cobb (1999). First, concordance can give readers or students mass exposure to a word in context and mass exposure to a word in context about what is needed for depth of vocabulary knowledge to develop. Then, concordances are not usually implemented as a reading source, but there is pedagogical motivation to view them.

For the benefits, readers can increase their contextual knowledge and can expand on it (Charles, 2007). The use of words provided in the corpus allows readers to look for references to the meaning of the text.

Online Dictionary

An additional feature in computer-assisted reading is a technology-based or online-based dictionary that has the same function to find out the meaning of vocabulary easily. Using an online dictionary could be more practical than a pop-up dictionary. Alharbi (2016) claimed that reading an online dictionary has a better performance on vocabulary than using a regular dictionary. However, there has been no direct comparison to date.

The other opinions come from Chen (2012) that there was no significant difference between the two types of dictionaries. However, Dziemianko (2012) found that an online dictionary was better for studying noun phrases than a printed dictionary. The use of dictionary type has an exciting thing to be researched.

Inquiry-Based Learning

The learning process is a complex outcome. It is the students who determine whether or not learning occurs (Dimyati & Mudjiono, 2016). The inquiry learning model is one of the learning models that involve the activeness of students in constructing their knowledge.

Inquiry is defined as a series of learning activities that emphasize critical and analytical thinking processes for finding the answer to a problem in question to developmental processes, including curiosity, critical thinking, investigation, and problem-solving (Sanjaya, 2006). The inquiry learning model is believed to be able to develop scientific

attitudes and realize active learning to develop student learning independence.

According to Kuhlthau et al. (2017), an inquiry is an effective way of learning to prepare students to think deeply about a lesson to succeed in authentic tests. The inquiry learning model tries to place students to find scientific concepts and principles by self-study and develop creativity in solving a problem.

Inquiry learning method also could be one of the recommended methods because this learning has several advantages, such as more emphasis on developing cognitive, affective, and psychomotor aspects in a balanced way so that the learning process is essential and useful. Second, this learning provides space for students to find their learning styles. This inquiry learning is also in accordance with the psychology of children's learning which considers the learning process to be a process of changing behavior or attitudes following existing experience. Fourth, this learning strategy is very much needed because it is relevant to what the students need (Sanjaya, 2012)

METHOD

Population and Sample

The subject of research is taken from one of the senior high schools in Sumenep, Indonesia. The sample taken is representative of the classes X11b and X11c at Senior High School of Nurul Huda. The number of students in grade XIIb is 23 students and 25 in grade XIIc.

To take the sample, the researchers select the sample according to their English language skills. Three students were taken as high achievers, three students as low achievers, and the other four as moderate achievers. Then the researcher randomized according to their level to be placed in the experimental or control class.

Instrument

Corpus containing texts in a computer is provided to the subject of research, and a computer is a tool that must be used for the treatment. The type of text in the corpus is story text that emphasizes language skills. For weight equality, the readability was checked using Flesch–Kincaid readability tests provided in Microsoft Word.

For the difficulty of the questions, the questions provided to students were not too difficult and not too easy, which is the characteristic of a

good instrument. To determine the level of difficulty, the researchers analyzed it using SPSS, with the criteria of difficult (0.00-0.30), moderate (0.31-0.70), and easy (0.71-1.00).

For validity, before validating through statistical calculation, the researcher consulted with two English teacher experts at the school, i.e. teachers at both classes and supervising teachers. After consultation by giving a questionnaire containing the relevant or irrelevant items, the researcher then analyzed them with the Gregory formula. Overall, the questions consist of 35 questions. Content validity ranged from 0.40-59 and for high content validity of 0.60-79. Meanwhile, the content validity was very high, starting from the coefficient of 0.80-1.00.

Based on the analysis results, the value shows 0.6, which means high validity both for the pre-test and post-test questions. So it can be continued with validation via SPSS.

After the content validity used the Gregory formula, the researchers then collected several people who graduated from the school to be tested for validity. Then, the validity of each item was tested using item analysis, namely by correlating the score of each item with the total score where the calculation was performed in SPSS. Validity test by comparing between r_{count} and r_{table} was performed using the correlation coefficient formula proposed by Pearson with the following criteria:

- a. If $r_{\text{count}} > r_{\text{table}}$, then the statement can be said to be valid
- b. If $r_{\text{count}} < r_{\text{table}}$, then the statement can be said to be invalid

r_{table} was determined based on the product moment table, by determining alpha (α) = 0.05 then n (sample) = 9, so that the value was 0.666.

The researchers made 35 questions for each pre-test and post-test, but the researchers chose questions that were already valid from the validity test results—then adjusted between the pre-test and post-test questions.

Based on the data, 15 items per pre-test and post-test can be declared valid because the analysis result showed $r_{\text{count}} > r_{\text{table}}$. So, these questions can be used for research.

A reliability test was used to determine whether the data collection tool could show the level of accuracy, stability or consistency. A reliable instrument is an instrument that is used several times to measure the same object which will produce the same data. Priyanto said that "a construct or variable instrument is said to be reliable if the Cronbach's

alpha coefficient is greater than 0.6 (as a standard value for which the reliability of a research instrument is accepted). The reliability of research instruments is in the range > 0.60 to 0.80 . It can be said to be good if it is in the range > 0.80 to 1.00 it is considered very good.

A reliability test can also be done by comparing the value of r_{count} coefficient in the Cronbach's alpha column with r_{table} . If the coefficient value of Cronbach's alpha is greater than r_{table} ($r_{\text{count}} > r_{\text{table}}$), the instrument is considered reliable, which means that the instrument meets the reliability requirements (Arikunto, 2006)

The data has Cronbach's alpha above 0.60 ($r_{\text{count}} > r_{\text{table}}$) or $r_{\text{count}} > 0.666$. This shows that all questions can be said to be reliable so that they can be used as an instrument.

Data Collection Procedures

The researchers scheduled the experiment by designing reading questions whose text was taken from the Lexical Tutor web application corpus. Researchers selected the students in one private school to collect the data and do the experiments. The computer laboratory in the school was used as the location of the research. If there was a problem, the second option was to use laptops according to the specified sample with connected wifi because this data collection required an internet connection to access the web. For the test, the researchers brought question paper that had been made and gave the students about thirty minutes to work on the questions that had been provided. For this treatment, students were only facilitated with question paper and pens brought by students, without a computer. Before the test, students had followed the previous learning process where one of the researchers was the teacher in each class.

For the data collection, which consisted of the learning and test process, the researchers divided it into six stages, i.e. pre-control learning process, pre-experimental learning process, test for pre-test, post-control learning process, post-experimental learning process, and test for post-test.

The first instruction was the pre-control and pre-experimental classes, followed by a test. After holding a learning process for pre-class and pre-test, the researcher continued to hold a learning process for post-class with the test. Finally, another learning process was held for the post-control and post-experimental classes, followed by a post test. The learning process used inquiry-based learning for the post-experimental class, and conventional instruction was used for the control class.

Techniques of Data Analysis

Data analysis is an important part of a research study, which provides information on how to answer the research question. For assessment, the score of every question was based on the existing formula, and zero was given for an incorrect answer. The maximum score for the test was 100. The question was multiple choices with four options. The students' scores were analyzed using the paired-sample T-test and independent sample T-test to figure out the effectiveness of computer-assisted reading.

RESULTS AND DISCUSSION

Hypothesis Test 1

After going through the prerequisite test with the homogeneity and normality test, the data were tested for hypotheses. The hypothesis test used in this study was a parametric statistical test, namely paired sample t-test, because the data were from two related variables. This test explained whether or not there was a difference in the mean between the two paired-sample groups. The data used were usually an interval or ratio scale. The following are the results obtained from the paired sample T-test.

Table 1. Pair sample T-test

		<i>Mean</i>	<i>N</i>	<i>Std. Deviation</i>	<i>Std. Error Mean</i>
Pair 1	pre-test experiment	63.80	10	16.082	5.085
	post-test experiment	69.60	10	15.764	4.985
Pair 2	pre-test control	64.40	10	13.962	4.415
	post-test control	67.10	10	10.203	3.226

The mean value of the pre-test experimental class was 63.80 and 69.60 for the post-test experiment, which shows an increase.

Table 2. Paired sample T-test

		Paired Differences						t	df	Sig. (2-tailed)
		Mean	SD	SE	95% Confidence Interval of the Difference					
							Lower	Upper		
Pair 1	pre-test									
	experiment	-	-5.8	8.9	2.8	-12.2	0.6	-2.0	9	0.072
Pair 2	post-test									
	experiment									
Pair 2	pre-test control -									
	post-test control	-2.7	9.5	3.0	-9.5	4.1	-0,9	9	0.392	

The statistical hypothesis is:

Ha : Grade XII Students at MA Nurul Huda students in Sumenep district who read using computer-assisted reading with inquiry learning has a higher score than those who do not read by using computer-assisted and inquiry learning,

Ho : Grade XII Students at MA Nurul Huda students in Sumenep district who read using computer-assisted reading with inquiry learning do not get a higher score than those who do not read by using computer-assisted and inquiry learning,

The statistical hypothesis in this study is :

Ha: $\rho \neq 0$

Ho: $\rho = 0$

Based on the output of **Pair 1**, it was obtained that a sig value (2-tailed) was .072, which was higher than the significance level of 0.05. it can be concluded that **there was no significant difference** in student learning outcomes for the pre-test experimental class with the post-test experimental class. Based on **Pair 2**, the sig value (2-tailed) obtained was .392, which shows that there was no significant difference in the student learning outcomes for the control class pre-test and the control class post-test.

From the result of the output of **Pair 1**, it can be concluded that there was no effect of computer-assisted reading with inquiry-based learning on students' reading comprehension. Therefore, the table above shows that the significance was .072>0.05, so **Ho** was accepted, and thus Ha was rejected, meaning that the hypothesis states that there was no significant difference in the reading comprehension results of students using computer-assisted reading with those who do not.

Hypothesis Test 2

Ha : There is a difference in the reading scores of students who use computer-assisted reading with an inquiry learning style and those who use conventional methods.

Ho : There is no difference in the reading scores of students who use computer-assisted reading with an inquiry learning style and those who use conventional methods.

The statistical hypothesis in this study is :

Ha: $\rho \neq 0$

Ho: $\rho = 0$

The following are the results obtained from the independent sample T-test.

Table 3. Independent sample T-test

<i>Levene's Test for Equality of Variances</i>		<i>t-test for Equality of Means</i>						
<i>F</i>	<i>Sig.</i>	<i>t</i>	<i>df</i>	<i>Sig. (2-tailed)</i>	<i>Mean Difference</i>	<i>Std. Error Difference</i>	<i>95% Confidence Interval of the Difference</i>	
							<i>Lower</i>	<i>Upper</i>
0.6	0.4	0.4	18	0.7	2.5	5.9	-9.9	14.9
		0.4	15.4	0.7	2.5	5.9	-10.1	15.1

Based on the output above, the sig value (2-tailed) was .679, which is higher than 0.05, and it can be concluded that **there was no significant difference** in the student learning outcomes between reading with computer-assisted reading and conventional reading. **Ho** was accepted, and **Ha** was rejected.

Table 4. Group statistics

	<i>Group</i>	<i>N</i>	<i>Mean</i>	<i>Std. Deviation</i>	<i>Std. Error Mean</i>
Learning outcome	post-test of experimental group	10	69.60	15.764	4.985
	post-test of control group	10	67.10	10.203	3.226

The difference in student learning outcomes for the post-test experimental class and the control class post-test can be observed in the descriptive statistical results in the independent sample T-test.

The score for the class using computer-assisted reading with inquiry-based learning or the experimental class was 69.60, while the control class was 67.10. Therefore, the post-test experiment group using computer-assisted reading was slightly larger in this case.

Discussion

The results showed that there was a slight difference although the statistical calculation does not show any difference. This can be seen from the average score of the pre-test, where the result was 63.80 while the average score of the post-test was 69.60. Before the post-test, students had been taught using inquiry-based learning and computer-assisted reading.

Based on the output of Pair 1, it was obtained that a sig (2-tailed) value of .072, which suggests that there was no difference in the average student learning outcomes for the pre-test experimental class with the post-test experimental class. Therefore, H_0 was accepted, and H_a was rejected, which means that there was no significant difference in the reading comprehension results of students using computer-assisted reading with those who did not.

The learning process with the help of technology can make it easier for teachers and students. Teachers can deliver the material easily for their students, but reading with the help of technology always yields different levels of success. However, strong readers will benefit from the technology provided and can integrate text cognitively.

Many technological features can usually improve student learning outcomes because students have their own abilities. In the web lexical tutor, there are several features such as audio-assisted reading, concordance, and online dictionary. In a study by Alaghbary (2018), tools such as lexical tutors can provide a better understanding for readers, especially about the nature of language. Another study by Yusniarsi (2019) revealed that computer-assisted language learning could affect students' reading comprehension in the informatics engineering study program.

Based on several previous studies, audio-assisted reading shows positive effects, but it focused on students who have learning disabilities (Gilbert et al., 1996) and with readers who have difficulties (Koskinen et al., 2000)

For the concordance feature, Cobb (2015) stated that students would remember for a long time if they encountered a word in several contexts. In other words, if students know one word in several contexts,

it makes it easier for them to remember it for a long time, and thus it can improve student understanding and learning outcomes. In addition, the technological feature in the lexical tutor is an online dictionary. Research by Alharbi (2016) shows that participants who typed some words into an online dictionary would learn more words than participants who only read from words from reading. Therefore, the availability of an online dictionary can usually affect student learning outcomes.

According to De Boer et al. (2013), technological features in second language learning place too much focus on the tools and not enough focus on the process. Hardman (2019) suggests that learning technology must be accompanied by teacher pedagogy. This means how teachers can use technology in the learning process. However, the researcher used inquiry-based learning as lesson plans, in which learning is students-centered. Ramasari (2020) found that inquiry-based learning can improve students' reading comprehension since, with this method, students are motivated and required to be active in the learning process. Another study from Merta (2019) on students' English learning achievement focusing on dialogue texts and congratulating expressions shows that the application of inquiry-based learning affected student achievement.

In the learning process, the researcher tried to explain the features in the lexical tutor and how to use them even though some students were not very interested in using them. In the reading process, for the experimental post-test class, three students were not very interested in using the audio-assisted reading feature, which was evident from the fact that they only used the headset for a while.

Although several features are available to improve students' reading skills and with an inquiry-based learning process, this analysis shows that computer-assisted reading and inquiry-based learning do not affect student learning outcomes.

CONCLUSION

The research that examined the use of computer-assisted reading with an inquiry-based learning process on student learning outcomes shows two results. First, Grade XII students at MA Nurul Huda who read using computer-assisted reading with inquiry-based learning did not obtain a higher score. Second, there was no significant difference in the reading scores of students who used computer-assisted reading with inquiry-based learning and those who learned with a conventional

method. Based on these results, it can be concluded that the use of computer-assisted reading with inquiry-based learning did not affect Grade XII student learning outcomes at MA Nurul Huda Sumenep.

REFERENCES

- Afandi, Junanto, T., & Afriani, R. (2016). Implementasi digital-age literacy dalam pendidikan abad 21 di Indonesia [The implementation of digital-age literacy in the 21st century education in Indonesia]. Paper presented at *Seminar Nasional Pendidikan Sains*, Universitas Negeri Surakarta, Surakarta.
- Ahmad, A. (2011). *Hakikat metode inkuiri* [The principle of inquiry method]. Makassar: Universitas Negeri Makassar.
- Alaghbary, G. S. (2018). The compleat lexical tutor as a resource for teachers of poetry. *Language and Language Teaching*, 17(1), 30-36.
- Alharbi, M. A. (2016). Using different types of dictionaries for improving EFL reading comprehension and vocabulary learning. *JALT CALL Journal*, 12(2), 123-149.
- Amer, A. A. (1997). The effect of teacher's reading aloud on the reading comprehension of EFL students. *ELT Journal*, 51, 43-47.
- Arikunto, S. (2006). *Prosedur penelitian: Suatu pendekatan praktek* [Research procedure: A practical approach]. Jakarta: Rineka Cipta.
- Askildson, L. R. (2011). Theory and pedagogy of reading while listening: Phonological recoding for L2 reading development. *Journal of Linguistics and Language Teaching*, 2(2), 267-286.
- Charles, M. (2007). Reconciling top-down and bottom-up approaches to graduate writing: Using a corpus to teach rhetorical functions. *Journal of English for Academic Purposes*, 6(4), 289-302.
- Chen, H. H.-J. (2011). Developing and evaluating an oral skills training website. *ReCALL*, 23(1), 59-78.
- Chen, Y. (2012). Dictionary use and vocabulary learning in the context of reading. *International Journal of Lexicography*, 25(2), 216-247.
- Cobb, T. (1999). Breadth and depth of vocabulary acquisition with hands-on concordancing. *Computer Assisted Language Learning* 12, 345-360.
- Cobb, T., Greaves, C., & Horst, M. (2001). Peut-on augmenter le rythme d'acquisition lexicale par la lecture? Une expérience de lecture en

- français appuyée sur une série de ressources en ligne [Can we increase the rate of lexical acquisition by reading? A reading experience in French supported by a series of online resources]. In *Regards sur la Didactique des Langues Secondes* (pp. 133-153). Montréal: Editions Logique.
- Cobb, T. (2015). Technology for teaching reading. *The TESOL Encyclopedia of English Language Teaching*, 5(1), 1–7.
- De Boer, A., Du Toit, P. H., Scheepers, D. M., & Bothma, T. J. D. (2013). *Whole brain learning in higher education: Practice-based evidence*. Oxford: Chandos.
- DePotter, B. (2009). The application of student-centered interactive teaching in english video, listening & speaking class. *Computer-Assisted Foreign Language Education*, 14(2), 54–58.
- Dimiyati & Mudjiono. (2016). *Belajar dan pembelajaran* [learning and teaching]. Jakarta: Rineka Cipta.
- Dziemianko, A. (2012). Why one and two do not make three: Dictionary form revisited. *Lexikos*, 22, 195–216.
- Folse, K. (2004). *Vocabulary myths: Applying second language research to classroom teaching*. Ann Arbor: The University of Michigan Press.
- Gilakjani, A. P. (2014). A detailed analysis over some important issues towards using computer technology into the EFL classrooms. *Universal Journal of Educational Research*, 2(2), 146–153.
- Gilbert, L. M., Williams, R. L., & McLaughlin, T. F. (1996). Use of assisted reading to increase correct reading rates and decrease error rates of students with learning disabilities. *Journal of Applied Behavior Analysis*, 29(2), 255-257.
- Hardman, J. (2019). Towards a pedagogical model of teaching with ICTs for mathematics attainment in primary school: A review of studies 2008–2018. *Heliyon*, 5(5), e01726.
- Harmer, J. (2007). *The practice of language teaching*. London: Pearson Longman.
- Hrastinski, S. (2019). What do we mean by blended learning? *TechTrends*, 63(5), 564–569.
- Koskinen, P. S., Blum, I. H., Bisson, S. A., Phillips, S. M., Creamer, T. S., & Baker, T. K. (2000). Book access, shared reading, and audio models: The effects of supporting the literacy learning of linguistically diverse students in school and at home. *Journal of Educational Psychology*, 92(1), 23-36.

- Kuhlthau, C. C., Maniotes, L. K., & Caspari, A. K. (2017). *Guided inquiry: Learning in 21st century school*. Boston: Greenwood Publishing Group.
- Kunlun, Z. (2007). The application of student-centered interactive teaching in English video, listening & speaking class. *Computer Assisted Foreign Language Education*, 14(2), 54-58.
- McMahon, M. L. (1983). Development of reading-while-listening skills in the primary grades. *Reading Research Quarterly*, 19, 38-52.
- Merta, N. (2019). Penerapan model pembelajaran inquiry-based teaching untuk meningkatkan hasil belajar bahasa Inggris [The implementation of inquiry-based learning model to improve English learning achievement]. *Journal for Lesson and Learning Studies*, 2(2), 228-238.
- Mina, C., & Glenberg. (2004). *Reading comprehension strategies: Theories, interventions, and technologies*. New York: Lawrence Erlbaum Associates.
- Muslaini. (2017). Strategies for teaching reading comprehension. *English Education Journal*, 8(1), 67-78.
- Peachey, N. (2005). Concordancers in ELT. British Council Teaching English. Retrieved from <http://www.teachingenglish.org.uk/think/articles/concordancers-elt>
- Ramasari, M. (2020). Teaching reading comprehension for the tenth grade students by applying an approach of inquiry-based on learning. *Jurnal Perspektif Pendidikan*, 14(1), 46-57.
- Riasati, M. J., Allahyar, N., & Tan, K. E. (2012). Technology in language education: Benefits and barriers. *Journal of Education and Practice*, 3(5), 25-30.
- Sanjaya, W. (2006). *Strategi pembelajaran* [Learning strategy]. Jakarta: Kencana Prenada Media Group
- Sanjaya, W. (2008). *Strategi pembelajaran berorientasi standar proses pendidikan* [Educational process-standard teaching strategy]. Jakarta: Kencana Perdana Media Group.
- Sanjaya, W. (2012). *Strategi pembelajaran berorientasi standar proses pendidikan* [Educational process-standard teaching strategy]. Jakarta: Kencana.
- Scardamalia, M. (2002). Collective cognitive responsibility for the advancement of knowledge. In B. Smith (Ed.), *Liberal Education in a Knowledge Society*. Chicago: Open Court

- Slavin, R. (2000). *Using student team learning* (4th ed). Baltimore: Johns Hopkins University, Center for Social Organization of Schools.
- Syamsuar, S., & Refliantor, R. (2018). Pendidikan dan tantangan pembelajaran berbasis teknologi informasi di era revolusi industri 4.0 [Education and challenges of information technology-based teaching in the era of industrial revolution 4.0]. *E-Tech*, 6(2), 1-13.
- Teo, T., Chai, S. C., Hung, D., & Lee, C. B. (2008). Beliefs about teaching and uses of technology among pre-service teachers. *Asia-Pacific Journal of Teacher Education*, 36(2), 163-174.
- Yang, Y. (2010). Developing a reciprocal teaching/learning system for college remedial reading instruction. *Computers & Education*, 55(3), 33-40.
- Yunus, M. M., Salehi, H., & Chenzi, C. (2012). Integrating social networking tools into ESL writing classroom: Strengths and weaknesses. *English Language Teaching*, 5(8), 42-48.
- Yusniarsi, P. (2019). Pengaruh computer-assisted language learning (call) terhadap kemampuan reading comprehension mahasiswa program studi teknik informatika di Universitas Islam Balitar [The influence of computer-assisted learning (CALL) on students' reading comprehension skills at the Study Program of Informatics at Universitas Islam Balitar]. *Jurnal Pendidikan Dan Pembelajaran*, 11(12), 189-197.
- Woodall, B. (2010). Simultaneous listening and reading in ESL: Helping second language learners read (and enjoy reading) more efficiently. *TESOL Journal*, 1(2), 186-205.
- Wu, J. G. (2019). the use of mobile devices in language learning: a survey on Chinese university learners' experiences. *CALL-EJ*, 20(3), 6-20.