

## The Effect of Using WhatsApp on Iranian EFL Learners' Vocabulary Learning

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### Abstract

This study investigated the effects of using WhatsApp on Iranian EFL learners' vocabulary learning. To fulfil this objective, 50 Iranian female participants were selected among 80 students from Adiban English language institute, Baghmalek, Khuzestan, Iran. They were at the intermediate level of English proficiency based on the results of Oxford Quick Placement Test (OQPT). The selected participants were then randomly divided into two equal groups; one experimental group and one control group. Afterwards, the researcher gauged their proficiency level of English vocabulary knowledge by a vocabulary pre-test. Then, the English words were instructed to the experimental group through WhatsApp; they used WhatsApp in order to practice the selected words outside of the L2 classroom. In fact, the researcher formed a group in WhatsApp and through the channel he sent the words to the participants in the experimental group. On the other hand, the control group received the word instruction through the traditional method. In the control group, the participants took part in in-door classes and the words were taught to them by the researcher in a face to face fashion. The whole instruction lasted 8 sessions. In the first two sessions the OQPT and the pre-test were administered respectively; in 5 sessions the treatment was applied, and in the last session the post-test was given to the participants of both experimental and control groups to determine the impacts of WhatsApp on the students' vocabulary learning. The results of paired samples and an independent samples t-tests indicate that there was a significant difference between the post-tests of the experimental and the control groups. The findings reveal that the experimental group significantly outperformed the control group ( $p < .05$ ) on the post-test.

**Keywords:** Technology, WhatsApp, Vocabulary learning

## INTRODUCTION

Using technology is an inevitable part of almost every aspect of life and educational environments are no exception. Computers, used as assisting tools for both teachers and students, have had beneficial uses in EFL classrooms. The use of computers to assist learning, or Computer-Assisted Language Learning (CALL), has gained popularity in language studies, even though, as Warschauer and Healey (1998) mention, this is not something new. However, due to the development of technology and the information era, it is a promising trend for language studies. The rise in popularity has not been in vain. It has been suggested that CALL may have many advantages. For example, CALL-based glossing is more efficient compared to paper-based glossing; moreover, writing is much easier in terms of accuracy when it is applied on computers (Taylor, 2013).

Nevertheless, recent developments in technology have shown that technology assistance is not limited to computers any more. Almost all the capabilities of computers have been fit into mobile devices, such as phones and tablets, which have increased access to technology in many classrooms. In the world of mobility, millions of users communicate in seconds with each other, and for this purpose, they use a variety of applications. As an application, WhatsApp allows users to communicate by sending text messages, voice messages, videos, and pictures (Han & Keskin, 2016)

WhatsApp is one of the evolutions in technology that is ordinarily operated on particular mobile phones. As the smartphones became in demand, many messaging services were initiated, but WhatsApp has become very widespread among them. Connection through mobile phones and particularly with WhatsApp messenger has become simpler, faster and cheaper (Han & Keskin, 2016). WhatsApp is employed in higher education. It is used for the improvement of exchange of views and participating data among lecturers and their pupils. Yalcinalp and Gulbahar (2010) state the advantages of these implementations as follows: motivate learners to learn by predicting demands, make collaborative learning productive and beneficial, construct an association that encourages learner-to-learner for constant and ongoing learning.

Using WhatsApp can help EFL learners learn more vocabulary items. The indispensable role of vocabulary learning in the realm of language learning for all four skills has been declared by many second language (L2) educators (Taylor, 2005). Lessard-Clouston (1996) claims that "vocabulary-words, phrases, idioms, etc. is at the heart of all language usage in the skill areas of listening, speaking, reading, and writing, as well as culture" (p. 27). In addition, McCarthy (1990) states that one needs to know a wide range of words to express a wider range of meanings. Therefore, having lexical knowledge is of great importance to understand articles, magazines, and other written texts. Also, handling written messages, listening texts, and conversation, the L2 learners need to have adequate words (Flynn, 2007).

Knowing vocabulary is one of the most important factors for learning a new language; it is the core ingredient to improve learners' language especially their reading comprehension. As Folse (2004) says vocabulary learning is essential for acquiring a language, in the same line Wilkins (1974) states that without grammar very little can be

conveyed, but without vocabulary nothing can be conveyed. According to Hatch (1983), basic communicative competence is largely concerned with the strategies the learners use to solicit the vocabulary they need in order to get meaning across.

Moreover, regarding the importance of words in handling communication, Hatch (1983) confirms that adequate knowledge of lexicon probably makes the communication possible. Making a pertinent statement about the significance of vocabulary, Krashen (1989) mentions that the L2 learners understand the importance of vocabulary for mastering L2 as they carry dictionaries with them rather than grammatical references. Those L2 learners who benefit from a rich knowledge of vocabulary perform better in both receptive and productive skills than those whose repertoire is smaller.

## REVIEW OF THE LITERATURE

### WhatsApp

The concept of WhatsApp is simple: share text-style messages to the others using the platform, but without paying data charges. It has gathered more than 700 million fans and this app is the world's most popular messaging platform (Milanovic, 2013). WhatsApp has become the "communication portal" for social networking that has quickly changed the way people communicate (Susilo, 2014). It is one of the evolutions which has been frequently used on particular mobile phones and computers (Yeboah & Ewur, 2014). As an exclusive, cross-platform instant messaging subscription service which is available on the new generation of smart phones such as iPhone, Android, Blackberry and Nokia mobile phones, WhatsApp allows its users to send free text messages to each that is, users are not charged for a text sent through WhatsApp (Hindu, 2011). This is because WhatsApp sends messages through an internet data connection. It should be mentioned that many other, different message types, from simple text to pictures to audio files and videos as well as one's location using integrated mapping features are supported by WhatsApp (Alsalem, 2013). With social networks rapidly gaining prominence in this scenario, WhatsApp is emerging as a tool that can be used for different educational purposes. WhatsApp is already being used to teach vocabulary or to disseminate general information and links for language learning.

Nowadays, mobile phones have become a crucial part of our daily life. Every individual has a personal cell phone of their own. Mobile phones have been expanding rapidly since 1995 (Chowdhury, Verdnik, Breznic, & Prihavec, 2012). They are employed not only for sending text messages and making calls, but also for the other varieties of applications such as watch a movie, play music and access internet. Many operating systems such as Windows, Mobile, IOS and Android are developed to give more functionality in mobiles. Android applications are currently being developed (Susilo, 2014). Lenhart, Madden, Smith, and Macgill (2009) claimed that "these kinds of messaging technologies are greatly applied among undergraduate learners nowadays" (p. 78).

### The Importance of Vocabulary

It is undeniable that vocabulary, like grammar and phonetics, plays an important role in mastering a foreign language. Vocabulary knowledge is often viewed as a critical tool for

second language learners because a limited vocabulary in a second language impedes successful communication. Underscoring the importance of vocabulary acquisition, Schmitt (2000) emphasized that “lexical knowledge is central to communicative competence and to the acquisition of a second language” (p. 55). Nation (2001) further described the relationship between vocabulary knowledge and language use as complementary: knowledge of vocabulary enables language use and, conversely, language use leads to an increase in vocabulary knowledge. The importance of vocabulary is demonstrated daily in and out the school. In classroom, the achieving students possess the most sufficient vocabulary.

Researchers such as Read (2000) and Gu (2003), and others have realized that the acquisition of vocabulary is essential for successful second language use and plays an important role in the formation of complete spoken and written texts. In English as a second language (ESL) and English as a foreign language (EFL) learning vocabulary items plays a vital role in all language skills (i.e. listening, speaking, reading, and writing (Nation, 2001).

Rivers and Nunan (1991), furthermore, argued that the acquisition of an adequate vocabulary is essential for successful second language use because without an extensive vocabulary, we will be unable to use the structures and functions we may have learned for comprehensible communication. Research has shown that second language readers rely heavily on vocabulary knowledge and the lack of that knowledge is the main and the largest obstacle for L2 readers to overcome (Prince, 1996). In production, when we have a meaning or concept that we wish to express, we need to have a store of words from which we can select to express this meaning or concept.

When students travel, they don't carry grammar books, they carry dictionaries (Lewis, 1993). Many researchers argue that vocabulary is one of the most important-if not the most important- components in learning a foreign language and foreign language curricula must reflect this. Wilkins (1974) stated that: “There is not much value in being able to produce grammatical sentences if one has not got the vocabulary that is needed to convey what one wishes to say while without grammar very little can be conveyed, without vocabulary nothing can be conveyed”(p. 97). Nation (2001) also asserted that “Giving attention to vocabulary is unavoidable. Even the most formal or communication-directed approaches to language teaching must deal with needed vocabulary in one way or another.

### **Experimental Background**

To prove the effectiveness of using WhatsApp on improving English language learning, some studies have been done. Al Saleem (2014) aimed to examine the effect of dialogue journaling via WhatsApp on undergraduate English students' writing performance in terms of vocabulary and voice. During the six weeks of data collection, students were given 30 prompts to write on and via WhatsApp. The two writing tasks given as pre-test and post-test indicated that there was a significant improvement in students' writing in terms of their word choices and voice.

In another experimental study, Castrillo, Martín-Monje, and Bárcena, (2014) examined the role of WhatsApp in fostering negotiation of meaning among 85 Spanish learners of German. Based on the results of the pre-questionnaire, students were divided into 5 WhatsApp groups of five, where they discussed topics that the author sent. Students' interactions in terms of their negotiation of meaning and engagement with the tasks were analyzed. Students were found to have high levels of motivation and participation, as well as having improved their meaning negotiation skills. Although some research has been carried out on the use WhatsApp in vocabulary teaching and, there have been few empirical investigations into its use in idiom teaching.

Recently, Jafari and Chalak (2016) investigated the role of WhatsApp in the vocabulary learning improvement of Iranian junior high school EFL students. Using a mixed method design, a group of 60 students including 30 male and 30 female students studying at two male and female junior high schools in Isfahan, Iran participated in the study. A pre-test and post-test were used. Four English classes were instructed and the experimental group received vocabulary instructions electronically four days a week for four weeks using the WhatsApp while the control group was taught vocabulary of their textbook inside the classroom by traditional method used in all Iranian schools for teaching English to students. The results revealed that using WhatsApp had significant role in vocabulary learning of the students. The results also showed that there was not a substantial difference between male and female students regarding their vocabulary knowledge after using WhatsApp.

## RESEARCH QUESTION AND HYPOTHESIS

The following research question was answered in this study:

**RQ 1.** Does using WhatsApp have any significant effect on Iranian intermediate EFL learners' vocabulary learning?

Based on the question raised above, the following null hypothesis was formulated in this study:

**HO 1.** Using WhatsApp does not have any significant effect on Iranian intermediate EFL learners' vocabulary learning.

## METHOD

### Participants

The sample of the study consisted of 50 Iranian female participants between the ages of 15 and 17 years. They were selected among 80 students from Adiban English language institute, Baghmalek, Khuzestan, Iran. All of them were at intermediate level of proficiency in English based on the results of Oxford Quick Placement Test (OQPT). The sample of the present study was chosen through random sampling. All the participants were native speakers of Persian. The selected participants were randomly divided into two equal groups; one experimental group and one control group. There were 25 respondents in each group.

## **Instruments**

The first instrument which was used in the present study to homogenize the participants was the OQPT. It could aid the researcher to have a greater understanding of what level (i.e., elementary, pre-intermediate, intermediate) the participants were at. According to this test, the learners whose scores were between 30 and 47 (out of 60) were considered as the intermediate learners.

The second instrument for gathering data to answer the research question of the study was a researcher-made vocabulary pre-test which was prepared based on the students' course book (Family and Friends). This test was given to measure the students' vocabulary knowledge before receiving the treatment. It consisted of 40 multiple choice items. The pre-test validity was confirmed by a panel of English experts and its reliability was computed through using KR-21 formula ( $r=0.822$ ). The researcher piloted the pre-test on another similar group so as to check the feasibility of the test that was going to be administered to the target participants.

The third instrument which was utilized in this study to ascertain the effects of the treatment on the participants' vocabulary learning was a researcher-made vocabulary post-test. The post-test was the modified version of the pre-test but in the post-test, the order of questions and options were changed to wipe out the probable recall of pre-test answers. Since the post-test was the modified version of the pre-test and there were only slight differences between them, the post-test was regarded both reliable and valid.

## **Materials**

To do this study, 80 English words from the book mentioned above were selected. Content words including verbs, nouns, adverbs, and adjectives were chosen. The words were given to the participants to ascertain which word was known to them and which one was unknown. The familiar words were excluded from the target words and the rest were taught to the students. Based on the assumptions of Dufon and Fong (1994), the target words which will be taught would be unknown, unfamiliar, or difficult for the participants. Ultimately, 50 words were selected as the unknown words and were instructed to the students.

## **Data Collection Procedure**

After the homogenous participants of the study were identified, the researcher gauged their proficiency level of English vocabulary knowledge by a vocabulary pre-test. Following the pretest, the students in the experimental group received the intended educational materials containing the English words by WhatsApp. The participants in the experimental group installed WhatsApp on their cell phones, tablets, laptops, or computers. The experimental group used WhatsApp in order to practice the selected words outside of the L2 classroom. In fact, the researcher formed a group in WhatsApp and through the channel he sent the words to the participants in the experimental group. He sent the words to the participants and then he asked some questions on the meaning of the words. When the participants faced a problem, they asked the researcher or other

participants. The interaction between the participants and the researcher took 60 minutes per week. In each week, 10 words were taught.

On the other hand, the control group received the word instruction through the conventional method. In the control group, the participants took part in in-door classes and the words were taught to them by the researcher in a face to face fashion. The researcher introduced the new words, and then he asked the participants to use them in sentences or giving their definitions. The instruction lasted 8 sessions and each was 60 minutes. In the first two sessions the OQPT and the pre-test were administered respectively; in 5 sessions the students received the treatment- using WhatsApp in learning English words-, and in the eighth session the post-test was given to the participants of both experimental and control groups to measure the students' progress as a result of the instruction.

### Data Analysis

After gathering the needed data, they were analyzed based on the objective of the study. In order to check the quality of data normality, Kolmogorov-Smirnov (K-S) test was used. After that, statistical tools including paired samples t-test and an independent sample t-test were run to determine the efficiency of WhatsApp on Iranian EFL learners' vocabulary learning.

### RESULTS

Table 1 shows that the statistics of scores is normal as the results obtained from using SPSS 22. In this case, the parametric statistics like independent samples t-test and paired samples t-test can be used to get the final results.

**Table 1.** One-Sample Kolmogorov-Smirnov Test (Groups' Pre and Post-tests)

		preex	postex	precont	postcont
N		25	25	25	25
Normal Parameters <sup>a,b</sup>	Mean	12.4000	18.8833	13.3833	14.7167
	Std. Deviation	3.78310	6.71727	5.11923	5.70486
Most Extreme Differences	Absolute	.175	.143	.127	.150
	Positive	.069	.143	.086	.150
	Negative	-.175	-.127	-.127	-.150
Kolmogorov-Smirnov Z		1.352	1.108	.982	1.164
Asymp. Sig. (2-tailed)		.052	.171	.289	.133

a. Test distribution is Normal.

b. Calculated from data.

**Table 2.** Group Statistics (Pre-test of Both Groups)

Groups	N	Mean	Std. Deviation	Std. Error Mean
Pre 1.00	25	13.3833	3.78310	.48840
2.00	25	12.4000	5.11923	.66089

In Table 2, the descriptive statistics of both groups is presented. The means of both groups are almost equal. The experimental group's mean score is 13.3833 and the control group's mean score is 12.4000. This means that the both groups are somehow similar since they are homogeneous at the beginning of the treatment.

**Table 3.** Independent Samples T-test (Pre-test of Both Groups)

		Levene's Test for Equality of Variances		t-test for Equality of Means						
				95% Confidence Interval of the Difference						
		F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Pre	Equal variances assumed	3.852	.052	1.197	118	.234	-.98333	.82177	2.61066	.64400
	Equal variances not assumed			1.197	108.638	.234	-.98333	.82177	2.61212	.64545

In Table 3, an independent samples t-test was used to show the scores of both groups on the pre-test. Since the Sig (.234) is greater than 0.05, the difference between the groups is not significant at ( $p < 0.05$ ). In fact, they performed the same on the vocabulary pre-test.

**Table 4.** Group Statistics (Post-test of Both Groups)

		Groups	N	Mean	Std. Deviation	Std. Error Mean
Post	1.00		25	18.8833	6.71727	.86720
	2.00		25	14.7167	5.70486	.73649

Table 4 reveals the descriptive statistics of both groups on the post-test. The means of the groups are different. The experimental group's mean score is 18.8833 and the control group's mean score is 14.7167. This means that the experimental group outperformed the control group.

**Table 5.** Independent Samples T-test (the Post-test of Both Groups)

		Levene's Test for Equality of Variances		t-test for Equality of Means						
				95% Confidence Interval of the Difference						
		F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Post	Equal variances assumed	2.389	.125	3.662	118	.000	4.16667	1.13774	1.91363	6.41970
	Equal variances not assumed			3.662	114.985	.000	4.16667	1.13774	1.91302	6.42032

Table 5 indicates that the difference between the both groups is significant at ( $p < 0.05$ ). In fact, the experimental group outperformed the control group on the post-test.

**Table 6.** Paired Samples Statistics (Pre and Post-tests of Both Groups)

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Preex	13.3833	25	3.78310	.48840
	Postex	18.8833	25	6.71727	.86720
Pair 2	Precont	12.4000	25	5.11923	.66089
	Postcont	14.7167	25	5.70486	.73649

Based on the descriptive statistics in the table above, the mean scores of the experimental group on the pre and post-tests are 13.3833 and 18.8833 respectively. The control groups' mean scores on the pre and post-tests are 12.4000 and 14.7167 respectively.

**Table 7.** Paired Samples T-test (Pre and Post-tests of Both Groups)

		Paired Differences					t	Df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	preex - postex	6.48333	7.63687	.98592	-8.45615	-4.51052	6.576	59	.000
Pair 2	precont - postcont	1.33333	7.10852	.91771	-3.16966	.50299	1.453	59	.152

In Table 7, a paired samples t-test is used to compare the pre and post-tests of each group. Since Sig (.000) is less than 0.05, the difference between the pre-test and post-test of the experimental group is significant. Here, it can be concluded that using WhatsApp helped the experimental group to improve their vocabulary knowledge. Based on the table above, since Sig (.152) is greater than 0.05, the difference between the pre-test and post-test of the control group is not significant.

## DISCUSSION

In this part the research question "Does using WhatsApp have any significant effect on Iranian EFL learners' vocabulary learning?" is answered based on the results obtained in the tables above. After collecting the data, the researcher used Paired Samples t-test and Independent Samples t-test to analyze them in order to find the effectiveness of WhatsApp on the students' vocabulary learning. The findings showed that the students who received instruction through WhatsApp had better performance compared to those who were trained traditionally. In other words, the results statistically revealed that the experimental group significantly outperformed the control group ( $p < .05$ ). Therefore, the null hypothesis of the study "Using WhatsApp does not have any significant effect on Iranian EFL learners' vocabulary learning" is rejected.

The positive effects of using WhatsApp was manifested in the experimental group's performance. Through WhatsApp, the researcher exposed the students to more comprehensible and authentic input and consequently the students could learn more

vocabulary items. In fact, using technology can enhance learners' motivation, self – confidence, involvement in learning and leads to mastery of basic skills. More importantly it is more oriented towards learner – centered learning and interactivity (McGrath, 1998). Nowaczyk (1998) proved that technology is more beneficial specifically for low achievers because it helps them become independent learners. By utilizing technology outside of class students of this study could have more interaction with each other through social networking-WhatsApp. This interaction resulted in learning vocabulary more easily. Online chatting could facilitate the development of the students' interactive competence.

Mobile phones and mobile applications in teaching vocabulary allow the students to learn beyond classroom borders. In other words, instructional activities are not limited to a set place, but can be conducted anywhere and anytime and learners can engage, often asynchronously, with teachers, learning resources and other learners. WhatsApp can provide a channel through which teachers can achieve faster and more seamless communication with their students. It can also increase the level of communication between students and create another venue for learning. WhatsApp is best viewed as a facilitator of communication and a means of dispersing educational resources and information to students. In this study WhatsApp help teachers to share the educational information to all the students. Besides, WhatsApp could help teachers to stay in contact with students outside the classroom and remind students of upcoming assignments or reach out to those that miss class.

The findings of this study are supported by Jafari and Chalak (2016) who inspected the role of WhatsApp in the vocabulary learning improvement of Iranian junior high school EFL students and revealed that using WhatsApp had significant role in vocabulary learning of the students. This study confirms the idea of Beauvis (1998) who believes that the move away from a teacher dominated class to a freer environment, where students are responsible for their own learning, results in an increase in both quantity and quality of learning. This improvement is not only limited to vocabulary but embraces other skills and sub-skills as well.

## **CONCLUSION**

With reference to the statistical results, it can be concluded that using WhatsApp significantly developed Iranian EFL learners' vocabulary learning. The conclusion to be drawn from this study is that chatting and learning via WhatsApp is beneficial to EFL learners to learn English language. The participants in the experimental group made a greater advancement on the post-test in comparison to their scores on the pre-test due to using WhatsApp. In sum, learning a language online is more attractive and useful for the students. Online chatting improves English learners' motivation and vocabulary learning; it attracts students' attention; it helps those introvert students to express their ideas without shyness. Chatting via WhatsApp can enhance students' typing skill and self-confidence. Therefore, using social network especially WhatsApp is recommended in Iranian EFL context.

## REFERENCES

- Alsaleem, B.I.A. (2014). The effect of WhatsApp electronic dialogue journaling on improving writing vocabulary word choice and voice of EFL undergraduate Saudi students. *Arab World English Journal*, 4(3), 213-225.
- Castrillo, M. D., Martín-Monje, E., & Bárcena, E. (2014). Mobile-based chatting for meaning negotiation in foreign language learning. In *Proceedings of the 10th International Conference on Mobile Learning. International Association for Development of the Information Society* (pp. 49-59).
- Chowdhury, A., Breznik, G., Verdnik, K., & Prihavec, B. (2012). *Customer identification and authentication procedure for online internet payments using mobile phone*. Google Patents.
- Dufon, D., & Fong, T. (1994). *Improving schooling for language minority children*. Washington, DC: National Academy Press.
- Flynn, J. R. (2007). *What is intelligence? Beyond the Flynn effect*. New York, NY: Cambridge University Press.
- Folse, K. (2004). *Vocabulary myths*. Ann Arbor: University of Michigan Press.
- Gu, Y. (2003). Fine brush and freehand: The vocabulary learning art of two successful Chinese EFL learners. *TESOL Quarterly*, 37(6), 73-104.
- Han, T., & Keskin, F. (2016). Using a mobile application (WhatsApp) to reduce EFL speaking anxiety. *Gist Education and Learning Research Journal*, 6(12), 29-50.
- Hatch, E. M. (1983). *Psycholinguistics: A second language perspective*. Rowley, MA: Newbury House.
- Hindu, H. (2011). WhatsApp comes to the rescue. *Education Plus Journal*, 3(3), 23-26.
- Jafari, S., & Chalak, A. (2016). The role of WhatsApp in teaching vocabulary to Iranian EFL learners at junior high school. *English Language Teaching*, 9(8), 85-92.
- Krashen, S. (1989). We acquire vocabulary and spelling by reading: Additional evidence for the input hypothesis. *The Modern Language Journal*, 73(4), 440-464.
- Lenhart, A., Madden, M., Smith, A., & Macgill, A. R. (2009). *Teens and social media: An overview*. Washington, DC: Pew Internet and American Life.
- Lessard-Clouston, M. (1996). ESL vocabulary learning in a TOEFL preparation class: A case study. *Canadian Modern Language Review*, 5(3), 97-119.
- Lewis, M. (1993). *The lexical approach*. Language Teaching Publications.
- McCarthy, M. (1990). *Vocabulary*. Oxford: Oxford University Press.
- McGrath, B. (1998). Partners in learning: twelve ways technology changes the student – teacher relationship. *Technological Horizon in Education*, 25 (9), 58– 62.
- Milanovic, R. (2013). *Building a better business website: 10 crucial strategies for turning your online presence into something your company can actually use*. Randy Milanovic.
- Miramontes, O., Nadeau, A., & Commins, N. (1997). *Restructuring schools for linguistic diversity: Linking decision making to effective programs*. New York: Teachers College Press.
- Nation, P. (2001). *Learning vocabulary in another language*. Cambridge, UK: Cambridge University Press.
- Noweczyk, R. (1998). Student perceptions of multimedia in the undergraduate classroom. *International Journal of Instructional Media*, 25(6), 367 – 368.

- Prince, P. (1996). Second language vocabulary learning: The role of context versus translations as a function of proficiency. *The Modern Language Journal*, 80(4), pp. 478-493.
- Read, J. (2000). *Assessing vocabulary*. United Kingdom: Cambridge University Press.
- Rivers, W. M., & Nunan, D. (1991). *Language teaching methodology: A textbook for teachers*. Hertfordshire: Prentice Hall International.
- Schmitt, N. (2000). *Vocabulary in language teaching*. Cambridge: Cambridge University Press.
- Susilo, A. (2014). *Exploring Facebook and WhatsApp as supporting social network applications for English learning in higher education*. Widyatama International Seminar (75).
- Taylor, G. (2005). Perceived processing strategies of students watching captioned video. *Foreign Language Annals*, 38(3), 422-427.
- Taylor, A. M. (2013). CALL-based versus paper-based glosses: Is there a difference in reading comprehension? *CALICO Journal*, 27(1), 147-160.
- Warschauer, M., & Healey, D. (1998). Computers and language learning: An overview. *Language Teaching*, 31(02), 57-71.
- Wilkins, H. (1974). The effects of glosses on incidental vocabulary acquisition in reading. School of Foreign Languages. *Journal of Language Teaching and Research*, 1(2), 117-120.
- Yalcinalp, S., & Gulbahar, Y. (2010). Ontology and taxonomy design and development for personalized web-based learning systems. *British Journal of Educational Technology*, 41(6), 883-896.
- Yeboah, J., & Ewur, G. D. (2014). The impact of WhatsApp messenger usage on students' performance in Tertiary Institutions in Ghana. *Journal of Education and Practice*, 5(6), 157-164.