THE EFFECTS OF ICT-BASED LEARNING ON STUDENTS' VOCABULARY MASTERY IN JUNIOR HIGH SCHOOLS IN BANDUNG

Zakir Hussain
English Education Department, Universitas Pendidikan Indonesia, Indonesia

zakir.radfar1@gmail.com

Abstract
ICT plays a vital role in English language learning, since it boosts motivation (Schoepp & Erogul, 2001), learners' autonomy (Tri & Nguyen 2014), and learning skills (Galavis, 1998). This study aimed to examine the effects of ICT-based learning using wiki on students' learning of vocabulary mastery at the junior high school level. The design of the present study was quasi-experimental. The population of the study was seventh graders of a junior high school in Bandung. Experimental group and control group comprised of 25 students each. The instruments of the study were a pre-test and a post-test of vocabulary mastery and an online learning platform called wiki. The data were analyzed by SPSS 16.0 for the windows. The findings revealed that there were significant differences at .05 level between experimental group and control group (df= 49, t= 2.02). Furthermore, recommendations are proposed for the teachers whose teaching philosophy is twisted with ICT-based learning. For instance, they should provide an interesting topic on the wiki, let them chat while working online, assign them working at home, and well prepare the facilities used in the class before starting of the lesson.
Keywords: ICT-based learning; effect; vocabulary mastery; EFL

INTRODUCTION

The essential aspect of learning a language is learning vocabulary. Wilkins as an early representative advocate of the communicative approach believes that learning vocabulary is as important as learning grammar (as cited in Shen, 2003). Besides, Alqahtani (2015) indicated that many learners see second language acquisition (SLA) mostly a matter of learning vocabulary and therefore they spend lots of their time on memorizing lists of words and then rely on their bilingual dictionary as a fundamental communicative resource. Also, vocabulary is called a basic for the development of the other skills for instance listening, writing, reading, speaking, pronunciation and spelling. Hence, vocabulary has got its central role in learning a language.

Furthermore, the 21st-century information and communication technology (ICT) has brought numerous benefits to different aspects of living, especially in teaching and learning. In fact, ICT is fertile of experienced science which differentiates modern lives. ICT is defined any communication device or application that encompassing radio, television, telephones, computers, network, hardware and software, satellite systems and so on, as well as the various services and applications associated with them, such as video conferencing and distance learning (Khan et al., 2015, p.). Further, ICTs are spoken in a particular context, for instance; ICTs in Healthcare, Libraries or Education.

At the meantime, English as Foreign Language (EFL) is not an exception when it comes to IC use. Kopinska (2013) believed that technologies are rapidly gaining the attention and interest of teachers and learners in EFL classrooms worldwide. Houcine also argued that ICT increases students' motivation and enhances personal commitment and engagement, Learners' collaboration and communication like web 2.0 tools (as cited in Isasag 2012). Today Web 2.0 technologies have become a ubiquitous component of our daily lives (Wang & Vasquez, 2012) which is used by millions of people to communicate, collaborate, network and entertain through blogs, wikis, social media, YouTube, and games. It is claimed that Web 2.0 tools in many L2 learning contexts have "transformed pedagogy curriculum design, the conception of language learning, and even the research in this field" (Wang & Vasquez, 2012).

Wiki is a web page that can be viewed by everyone who has access to the internet. It is open-ended and can be used interactively and collaboratively throughout the web. Here, the readers are the authors, co-authors and editors, and everyone can upload, create a page and link the web pages. In fact, Wiki is an active learning community that helps to share information, creating knowledge and organizing materials which combine a person personality,

interactivity, and collaboration. Hence, wikis are used mostly in classrooms more than others and are significant and efficient.

Indonesia is one of the 20th countries with the highest number of ICT users (Lim and Nugroho, 2011). However, massive use of ICT is not shifted well in the school curriculum of Indonesia. Based on Ministry of education and culture (2013), ICT usage in Indonesian schools has repeatedly been reported low (Arzal in Monash arts, n.d.). Meanwhile, it is believed that ICT can help Indonesian government to achieve their goal which is called three pillars of educations development (Fortunasari, 2016) that ICT must be implemented in teaching subjects to gain the learning goals (Decree no. 65 of 2013).

Regarding the stated above, applying ICT in Indonesian schools is a must. Therefore, this research was conducted in a junior high school to reveal ICT-based learning implementation and instruction effects on students' vocabulary mastery in EFL class. Moreover, this research will disclose using more meaningful ICT integration, especially "Wiki" for improving students' skill and performance in EFL class that will help English teachers to figure out their future teaching philosophy based on ICT implementation in EFL classes in Indonesia.

The focus question of this research is "How is the effect of ICT-based learning on students' vocabulary mastery in junior high school?" To clarify the issue, these following questions are to be answered:
1. Does Wiki effect on students improved vocabulary mastery in EFL class?
2. Is there any significant difference in students' achievements' with ICT` based learning in EFL class in junior high school?

LITERATURE REVIEW
ICT in Education and EFL Classes
ICT is defined as a scientific, technological and engineering-based management techniques which are used in information storage and communication mechanism with optimal time and space utilization in comparison to other traditional methods adopted for the same (Raval, 2014), in other words, Azad (2010) stated that the word "ICT" is any communication device or application such as the computer, mobile phones, radio, television, satellite system, etc. which are used for accessing, gathering, manipulating and presenting or communicating information (cited in Toomey, 2001).

Mikre (2011) stated that ICTs had revolutionized the way people work today and are now transforming education systems. Volman (2005) includes that the gradual progress in using computers changes from learning about computers to learning computers, and finally to learning with computers. Further, Liu (2009) adds that Technology is playing a greater role during class and home study, as computer-assisted instruction and interactive media technologies, supplement the traditional use of the chalk and the blackboard. Also, Policy makers widely accept that access to information

and communication technology (ICT) in education can help individuals to compete in a global economy by creating a skilled workforce and facilitating social mobility (open access 02, 2014).

Moreover, Schools throughout the western world have invested a lot in their infrastructure over the past 20 years (Pelgrum & Anderson as cited in Volman, M. 2005). By introducing Computers in schools, now computers are as a part of ICT accepted as an efficient means of acquiring knowledge (Volman, 2005). This was proved by several studies that students who are using ICT gain higher score than students who do not. For instance, Kulik's (1994) findings showed that Students who used computer tutorials in mathematics, natural science, and social science score significantly higher on tests in these subjects and Students who used simulation software in science also scored higher. Similarly, the results also indicated that primary school students who used the tutorial software in reading scored significantly higher on reading scores, including these young students who used computers to write their own stories scored considerably higher on measures of reading skill. Meanwhile, students who used word processors or otherwise used the computer for writing scored higher on the steps of writing ability.

Besides, there is a common belief that the use of ICTs in education contributes to a more constructivist learning and an increase in activity and greater responsibility of students (Mikre, 2011) so it means that the role of the teacher in supporting, advising, and coaching of students becoming less rather than transmitting knowledge, so this why Technological advancement and innovations in educational transactions make a visible impact on academic development as well as administration and Traditional methods of imparting higher education have become less motivating to the large number of students (Raval, 2014). Hence, ICT no longer serves to be a simple additional means, but ICT is an indispensable part of the modern and contemporary learning environment (Kalnina & Kangro, as cited in Isisag, 2012).

English Language as the lingua franca is required for communication, science, information technology, business, aviation, entertainment, radio, television and even diplomacy (Abilashai, Ilankumaran, 2014). Meanwhile, Technologies are rapidly gaining the attention and interest of teachers and learners in English as Foreign Language (EFL) classrooms in the world (Kopinska, 2013) which the modern technologies are needed for a well-mixed method of delivery to innovate appropriate teaching techniques to elevate the process of learning English language (Ibrahim, 2010). Therefore, shortly in EFL classes the teaching and learning cannot be done with the textbook alone (Mishra & Koehler as cited in Raman & Mohamed, 2012). Likely, EFL teachers used ICT tools for preparing teaching materials such as pronunciation (Lee, 2002), vocabulary (Tsou, Wang, & Li, 2002), listening and speaking (Hochart, 1998), grammar (Al-Jarf, 2005) and communication skills (Lee, 2002).

Therefore, language teacher has always been the pioneer in using technology teaching tools in their classes (Amiri, as cited in Rahimi & Yadollahi, 2011).

Besides, ICT new instrument has altered the way we learn and teach and additionally provides a diversity of teaching and learning opportunities for applicants to learn language (Yunus et al., 2009) because technology can afford chances for meaningful teaching and learning environments which can affect students' motivation, critical thinking, and independence (Rahimi & Yadollahi, 2011) and gives more opportunities for interaction with their peer learners (Padurean & Margan, 2009) For instance, they can exchange information in real time, they can participate in blog discussions, work in teams on different projects, exchange emails and search for information, etc.

Unlike the facts mentioned above, ICT as a teaching aid is more complicated which demands more accurate skills from the teachers (Salehi & Salehi, 2012) and undoubtedly the development of ICT such as electronic mail, internet and multimedia in using collaborative platforms influences the process of using them in everyday classroom that unfortunately most teachers only use a limited range of types of technology which still stays at their personal level (Park, *et al.* as cited in Xuan, T.T, 2013).

Vocabulary and ICT

Vocabulary is the important part of learning a language and as a meaning of a new word is emphasized in books and classrooms. Alqahtani (2015) claimed that Vocabulary means words that we use to communicate effectively in speaking (expressive vocabulary) and in listening (receptive vocabulary). Others such as Hornby (1995) defined vocabulary as the total number of words in a language and Sedita (2005) included that vocabulary is one of the five core components of reading instruction which includes phonemic awareness, phonics and word study, fluency vocabulary, and comprehension.

Koptyug (n.d.) stated that uses of ICT in language teaching vocabulary are in several ways e.g.:

a. The regular class: the teacher should hold a regular class with the availability of computer and internet. The teacher can download English material and deliver to the students.

b. Using the net as a research resource: students should be given the opportunity to the search engine. While working, they can have the note, and next day it provides good feedback. In this case, it is too much motivational to students using the web and will enjoy the reporting of what they have learned.

c. Web site projects: there is a website project, and students are writing their essays and the teacher checks in the class, and then students will use the computer and the internet to email their works to the project site.

d. Real communication: students always like to email their job which is called "keypal." They can do this with their friends in abroad and communicate about their

culture to use modern word combination and exchange cultural information

Also, Dalton and Grisham (2011) proposed ten strategies how to teach and learn vocabulary through using technology:

a. Learn from visual displays of word and relationships with text.

b. Take a digital vocabulary field trip

c. Connect fun and learning with online vocabulary games

d. Have students use media to express vocabulary knowledge

e. Take advantage of online word reference tools that are also teaching tools

f. Support reading and word learning with just-in-time vocabulary reference support

g. Use language translators to provide just-in-time help for ELLs.

h. Increase reading volume by reading digital text

i. Increase reading volume by listening to digital text with a text-to-speech tool and audio books. Combine vocabulary learning and social service.

Meanwhile, Padurean and Margan (2009) explained the role of the computer in class explicitly. The role of the computer is assumed as the role of stimuli in language learning, and they called computer as a tool stage that helps in understanding and using language through spelling and grammar checker and editing of the program and finally it is introduced CALL which includes all steps. Relatively, Wiki is a web-based collaboration that can be modified by any of the web browsers which can be viewed, edited and created quickly. It is believed that Wiki or Wikipedia is considered a tool to expedite social constructivist learning process (Khany & Khosravian, 2014). Further, Forte and Bruckman (2006) claimed that it challenges the traditional pedagogical hypothesis regarding the teaching of some or sub-skills in a language (as cited in Khany & Khosravian, 2014).

According to Graves (2006), Wikis have much potential in the teaching of vocabulary. Therefore, students can follow the different methods in learning vocabulary in the wiki:

a. Students should supply the information included the context and the meaning.

b. Students should be engaged and should have given enough time to learn the word.

c. Students should have many disclosures by practicing and reviewing the word

d. Students should have a conversation about the meaning of the word.

Further, within e-learning system design such as a wiki regarding the pedagogical selected model, teachers will be able to use the learning resources in a form that is suitable to the learning objectives and especially to the learning style of the student (Granic et al. 2009).

METHODOLOGY
Method and design

The design of this research is a quasi-experimental to investigate whether ICT-based learning affects the students' vocabulary mastery or not. Freankel et al. (2012) stated that two groups are involved in a quasi-experiment: An experimental group where the treatment was conducted and a control group which is observed. Also, Hatch & Farhady (1982) said that a pre-test and a post-test are carried out in both groups. The experiment took overall seven meetings (each session lasted for 80 minutes).

The population of the research included the 7th graders of a public school in Bandung. It is believed that at this level students learn new and basic vocabularies. Hence, we can find out the effect of ICT better rather than in students at higher level. Furthermore, two classes were chosen as a sample that represented the population. These two classes were purposively sampled and had the same proficiency level of the English; they had been selected based on the teacher recommendations due to their timing schedule that included 25 students for each

class. Besides, one class at the same level was chosen to see the validity and reliability of the questions. Pre-test and post-test were the instruments used in this study. Whereas treatment was employed in the experimental class, control class was observed by the researcher to see whether the class ran on an ordinary and regular course curriculum or not.

RESULTS
Data analysis on Pre-test and post-test
After collecting the output data such as pre-test and post-test, the next step is to analyze the data using SPSS 16.0 for windows. Independent *t*-test was used to analyze the output data to see whether there is a significant difference between the means gained by the participants before and after the treatment or not. To see the differences between the two mean score of both classes, the *t*-test was used as the data were normally distributed (Hatch & Farhady, 1982). The test revealed that both classes have similar ability in vocabulary mastery.

Table 1 test of normality

Tests of Normality

	GROUP	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
PRETEST	CONTROL CLASS	.157	25	.114	.943	25	.175
	EXPERIMENTAL CLASS	.113	25	.200	.954	25	.308

a. Lilliefors Significance Correction

*This is a lower bound of the true significance.

The table above shows that the pre-test data of the control class and experimental class are normally distributed because the Asymp Sig. of the data in Kolmogorov-Smirnov column is greater than 0.05. In details, the probability of the control class (Asymp. Sig) is 0.114, and the experimental class (Asymp.Sig) is 0.200. It means the pre-tests of both classes are normally distributed. Besides, Levenes' test is used to analyze the homogeneity of the variance by using the SPSS 16.0 for windows.

In checking the homogeneity of the variance, a comparison of the Asymp. sigs. at the significance level at 0.05 is necessary. In this case, the probability should be >0.05; therefore, the variance of the control and experiment are expected to be homogeneous.

Table 2 Test of Homogeneity

Test of Homogeneity of Variances

PRETEST

Levene Statistic	df1	df2	Sig.
.508	1	48	.479

Based on the findings above, the probability of score in pretest is higher than 0.05 (0.479>0.05). It clarifies that the variances of both classes are homogeneous.

Independent *t*-test
In order to disclose the significant differences between the mean of control and experimental class in the pre-test, it is analyzed with independent *t*-test formula in SPSS 16.0. Furthermore, to reject the null hypothesis that there is no significant difference between the two classes, there is a need to compare between t_{obt} and t_{crit} at the level of 0.05 and df=48 (2.021). Moreover, if the null hypothesis is rejected, it means that there is the difference between the mean of the two classes ($t_{obt}>t_{crit}$). In opposite, if the hypothesis is accepted then there is not any difference of means between the two classes ($t_{obt}<t_{crit}$).

Table 3 shows the t-test result.

Group Statistics					
	GROUP	N	Mean	Std. Deviation	Std. Error Mean
PRETEST	CONTROL CLASS	25	49.94	12.069	2.414
	EXPERIMENTAL CLASS	25	52.80	11.100	2.220

Independent t-test results

		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
PRETEST	Equal variances assumed	.508	.479	-.871	48	.388	-2.857	3.279	-9.451	3.737
	Equal variances not assumed			-.871	47.668	.388	-2.857	3.279	-9.452	3.738

According to t-test table 3, there are differences in mean of the control class (49.94) and experimental class (52.8). While t_{obt} is 0.871which means t_{obt} is smaller than t_{crit} (0.871<2.021). Hence, the null hypothesis is accepted (H0). It clarifies that there is no significant difference of means between control and experimental group in the pre-test.

The result of Post-test
The analyzing procedure of the post-test was similar to the pre-test. Besides; the post-test measures the students' improvement in vocabulary mastery after conducting the treatment and expose the differences whether there is any difference in scores between two classes or not.

The normality distribution test
The measurement of the normal distribution of post-test is performed by the Kolmogorov-Smirnov in SPSS 16.0 to see whether the scores are normally distributed or not. When the data are normally distributed, they can be compared using the parametric statistics; for instance, simple *t*-test, and if they are not normally distributed, then they can be analyzed further with non-parametric statistics such as Wilcoxon test. The result of the normality of the post-test is presented in the table 4.

Table 4 Test of the normality

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	GROUP	Statistic	df	Sig.	Statistic	df	Sig.
POSTTEST	CONTROL CLASS	.129	25	.200[*]	.966	25	.544
	EXPERIMENTAL CLASS	.137	25	.200[*]	.960	25	.409

a. Lilliefors Significance Correction

*. This is a lower bound of the true significance.

Table 4 reveals that post-test data of the control class and experimental class are normally distributed because the Asymp Sig. of the data in Kolmogorov-Smirnov column is greater than 0.05 (0.544>0.05 and 0.409>0.05). In order to measure the homogeneity of the variance, Asymp.sig with the significance level at 0.05 should be compared.
Table 5. Test of homogeneity
Test of Homogeneity of Variances
POSTTEST

Levene Statistic	df1	df2	Sig.
.013	1	48	.910

According to the findings in table 5, the probability of score in post-test is higher than 0.05 (0.910>0.05). It means that the variances of both classes are homogeneous.

Independent *t*-test of post-test
To find out the significant differences between the mean scores of control and experimental classes in post-test, the data are analyzed by independent *t*-test. Rejecting the null hypothesis (H0) means there is no significant difference between the two classes. The next step is to compare between t_{obt} and t_{crit} at the level of 0.05 and df = 48 (2.021). Also, if the null hypothesis is rejected, it means there is a difference between the mean scores of the two classes (t_{obt}>t_{crit}). However, if

the hypothesis is accepted, then there is no difference in the mean scores between the control and experimental groups ($t_{obt}<t_{crit}$).

Table 6. The *t*-test result.

Group Statistics

	GROUP	N	Mean	Std. Deviation	Std. Error Mean
POSTTEST	CONTROL CLASS	25	58.06	11.118	2.224
	EXPERIMENTAL CLASS	25	65.03	11.317	2.263

Independent Samples Test

		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
POSTTEST	Equal variances assumed	.013	.910	-2.197	48	.033	-6.971	3.173	-13.351	-.592
	Equal variances not assumed			-2.197	47.985	.033	-6.971	3.173	-13.351	-.592

As shown in Table 6, the mean score of the control group is (58.06) and the mean score of the experimental group is (65.03). Moreover, t_{obt} is (2.197), which means t_{obt} is greater than t_{crit} (2.197>2.02). Therefore, the null hypothesis is rejected (H_0). It means that there are significant differences in the mean scores of the control and experimental groups in the post-test.

The paired *t*-test
The paired t-test was used to measure the scores of the experimental group through SPSS 16.0 for windows. It was aimed to see the differences of mean scores between Pre-test and Post-test. The result provided below:

Table 7 paired *t*-test

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	PRETEST	51.37	50	11.566	1.636
	POSTTEST	61.54	50	11.648	1.647

As table shown, the mean score of the pre-test in experimental class is (51.37), while the mean score of post-test is (61.54). Including this, the significance of the 2 tailed is 0.00, which is smaller than 0.05 (0.00<0.05). See table 8.

Table 8. Paired Sample Correlations

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	PRETEST & POSTTEST	50	.807	.000

Based on the findings above, it is revealed that the null hypothesis is rejected; which means there was a difference in the pre-test and post-test scores after the treatment.

The finding also reveals that the mean of post-test in experimental group is higher than that of the pre-test. It is because the experimental group received the treatment of learning vocabulary via Wiki during the lesson. The students have learned about the words used in sentences, how to find meanings, and find synonyms describing pictures as well as using the words in their story. It is in line with Marazano's vocabulary learning strategy (Scurletis, 2009) that students should describe, provide an explanation, give non-linguistic definition, discuss, and play game in learning words. In other side, the control group did not receive any treatment of learning vocabulary during their class. The class normally performed the teaching and learning that focused on vocabulary improvement of the students. The researcher has also observed the class to see whether the class runs on a normal and regular class curriculum or not.

Respectively, the result of this study is in line with the results of Khany, R. & Khosravian, F (2014), Sadikin (2016), and Eren (2015) who reported that there was statistically significant difference in language learners' vocabulary development. Their findings

showed that students in experimental group receiving treatments of teaching and learning using various ICT platforms have surpassed than those in the control group. Therefore, they believed that ICT is an encouraging authentic resource to help EFL students in elevating their vocabulary knowledge.

CONCLUSIONS

The aim of this research was to find out the effectiveness of the ICT-based learning such as Wiki in enhancing students' vocabulary mastery in a junior high school in Bandung, Indonesia. The instruments used in this study were pre-test, post-test and online platform called Wiki.

According to the findings and discussions of this study, applying the Media to the junior high school students in Bandung could improve their vocabulary mastery. This claim is based on the difference in the mean scores between those who used Wiki and those who did not.

The findings further reveal that the score difference between the control and experimental classes was significantly different. The results were proved by *t*-test on both the pre-test and post-test scores. In the beginning, the control group and experimental group were statistically at the same level of scores, as can be seen from the homogeneity test.

Relatively, after several implementations of the treatments to the experimental class, both groups were tested again using the same test, and the scores were highly improved.

Null-hypothesis was used in this study, and the findings showed that the hypothesis was rejected. It means there was a statistically significant difference between the experimental class and control class ability in mastering vocabulary. It was also exposed that the experimental class gained better scores than the control class in terms of the ability in vocabulary mastery as the class yielded a positive result.

To sum up, learning vocabulary through Wiki is proven effective to provide students an alternative of vocabulary learning media, which is online and meanwhile, creating joyful learning activities in the class.

Respectively, the implementation of ICT-based learning using Wiki is significant in teaching vocabulary for student's vocabulary mastery in EFL junior high school, Bandung; nevertheless, some suggestions are given regarding the of Wiki in teaching EFL class. There is some guidance for the EFL teachers who use Wiki as an ICT-based learning medium in teaching vocabulary mastery in schools: Though Wiki promotes collaborative web-based learning, it is impossible to be implemented in the class where students cannot edit and share their works at the same time. In this case, the teacher should figure it out and assign the work to be done at home. However, learning vocabulary through Wiki is fun, provided that the teachers give interesting topics to students. Teachers should also use different methods so that students could chat with each other while working on Wiki. Students like doing interactive activities like this, as it is experience-basedd and interesting. Teachers should well prepare the facilities; otherwise, they will have problems in implementing the ICT-based learning. Since this study is dealt with improving one aspect of learning a language, further research may focus on other aspects, such as teaching writing through Wiki. Students might be interested in writing for the website.

REFERENCES

Al-Jarf, R. S. (2005). The effects of online grammar instruction on low proficiency EFL college students' achievement, *The Asian EFL Journal Quarterly*, *7*(4), 166-90.

Alqahtani, M. (2015). The importance of vocabulary in language learning and how to be taught. *International Journal of Teaching and Education*, *3*(3), 21-34. 10.20472/TE.2015.3.3.002

Dalton, B. & Grisham, D. L (2011). eVoc strategies: 10 ways to use technology to build vocabulary. *The reading teacher, 64*, 306-317.

Eren. M. (2015). Vocabulary learning on learner-created content by using web 2.0 tools**.** *Contemporary Educational Technology, 5*(4), 281-300.

Fortunasari. (2016). The use of information and communication technologies (ICTs) in English as foreign language learning: A review of recent practices in Indonesia. *The Asian EFL Journal*, 1738-1460.

Galavis, B. (1998). Computers and the EFL Class: Their Advantages and a Possible Outcome, the Autonomous Learner, *FORUM, 36* (4), 27-35.

Granic, A. Mifsud, C.L., & Cukusic, M. (2009). Design and implementation and validation of a Europe-wide pedagogical framework for e-learning. *Computers and Education, 53*(4), 1052-1081.

Graves, M. F. (2006). *The vocabulary book: Learning and instruction*. New York: Teachers College Press.

Ibrahim, A.I. (2010). Information & Communication Technologies in ELT, *Journal of Language Teaching and Research*, *1*(3), 211-214.

Isisag, K.U. (2012). The positive effects of integrating ICT in foreign language teaching. The International Conference *"ICT for language learning" 5ᵗʰ edition*. Gazi University (Turkey)

Hornby, A. S. (1995). *Oxford advanced learners' dictionary of current English*, Fifth Edition. New York: Oxford University Press

Hochart, J.J. (1998). Improving listening and speaking skills in English through the use of authoring systems. *ReCALL, 10*(2),18-24.

Khan, M.S., Khan, I., U-Din, S., & Jan, R. (2015). The impacts of ICT on the students' Performance: A Review of Access to Information. *Research on Humanities and Social Sciences, 5*(1), 85-94.

Khany, R. & Khosravian, F. (2014). Iranian EFL learners' vocabulary development through

Wikipedia. *English Language teaching, 7*(7). 57-67.

Kopinska, M. (2013). New technologies in foreign language classroom: the role of attitudes. *The 6th edition of the ICT for Language Learning Conference.*

Kulik, J.A. (1994). Meta-analytic studies of findings on computer-based instruction. In J.E.L.Baker &H.F.O'Neil (Ed.), *Technology Assessment in Education and Training.* Hillsdale, NJ: Lawrence Erlbaum.

Lee, L. (2002). Enhancing learners' communication skills through synchronous electronic interaction and task-based instruction. *Foreign Language Annals, 35*(1), 16-24.

Liu, J. (2009). A survey of EFL Learners' Attitudes toward information and communication technologies. *English Language Teaching, 2*(4),101-106.

Lim, M., & Nugroho, Y. (2011) introduction to the special issue on social implications of the ICTS in the Indonesian context. *Internetworking Indonesia Journal, 3*(2), 1-3.

Mikre, F. (2011). The role of information communication*, Ethiop. J. Educ. & Science, 6*(2), 111-126.

Padurean, A., & Margan, M. (2009). Foreign language teaching Via ICT*. Revista de Informatica Sociala 7*(12), 97-101.

Raman, A. & Mohamed, A.H (2013). Issues of ICT Usage among Malaysian Secondary School English Teachers. *Canadian Center of Science and Education*, *6*(9), 1916-4742

Raval, M.R. (2014). Use of ICT in English language teaching*. International Journal of Research in all Subjects in Multi Languages, 2*(2), 21-24.

Sadikin. I.S. (2016). The use of web quest for teaching English vocabulary in an EFL young learner context. *ICTTE, 1*(1), 403-410.

Salehi, H., & Salehi Z. (2012). Integration of ICT in language teaching: Challenges and barriers. *3rd International Conference on e-Education, e-Business, e-Management and e-Learning IPEDR* vol.27 IACSIT Press, Singapore.

Sedita*,* J. (2005). Effective vocabulary instruction. *Insights on Learning Disabilities, 2*(1), 33-45*.*

Schoepp, K., & Erogul, M. (2001). Turkish EFL students' utilization of information technology outside of the classroom. *TEFL Web Journal, 1*(1), 14.

Azad, R. K. (2010). Information Technology on Distance Learning. In Saxena Jyotsna & Rai Geeta. (Eds.). Role of ICT and. total quality management in professional education (pp. 98-109). New. Delhi: APH Publishing Corporation.

Tri, D. H & Nguyen, N.H. (2014). An exploratory study of ICT use in English language learning among EFL university students. *Teaching English with Technology, 14*(4), 32-46.

Shen, W.W. (2003). Current trends of Vocabulary teaching and learning strategies for EFL settings, *Feng Chia Journal of Humanities and Social Sciences, 7*, 187-224.

Scurletis, G. (2009). Marzano's six steps to effective Vocabulary instruction, VISUAL THESAURUS; workshop vocab activities for your classroom. Retrieved from https://www.visualthesaurus.com/cm/wordshop/marzanos-six-steps-to-effective-vocabulary-instruction/

Toomey, R. (2001). Information and communication technology for teaching and learning. *Schooling Issues Digest, 2*, 1-6.

Tsou, W., Wang, W., and Li, H. (2002). How computers facilitate English, foreign language learners acquire English abstract words. *Computers & Education*, *39*(4), 415-428.

Volman, M. (2005*).* A variety of roles for a new type of teacher educational technology and the teaching profession. *Teaching, and teacher education, 21*, 15-31.

Wang, S. & Vasquez, C. (2012). Web 2.0 and second language learning: What does the research tell us? *CALICO Journal, 29*(3), 412-430.

Xuan T. T. N. (2013). English language teachers' Digital Literacy Development: A case study of English as a foreign language teachers at a Vietnamese University, *The Asian Conference on Education 2013, Official Conference Proceedings*; Osaka, Japan.

Rahimi, M., & Yadollahi, S. (2011). ICT use in EFL classes: A focus on EFL teachers' characteristics*. World Journal of English Language, 1*(2), 17–29.

Yunus, M.M., Lubis, M. A., & Lin, C.P. (2009). Language learning via ICT: uses, challenges and issues. *Wseas Transactions on Information Science and Applications, 6*(9), 1453-1467.