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YOUNG LEARNERS' VOCABULARY ENHANCEMENT: A COMPUTER-ASSISTED LANGUAGE LEARNING (CALL) EFFECT

Angga Maulana[1] and Siska Rizkiani[2]

This study is aimed at investigating the effect of CALL in vocabulary mastery for young learners. The ability in mastering vocabulary holds an essential element in the process of learning a language, including English. In developing the learners' vocabulary, an English teacher can make the way of teaching vocabulary varied. The teachers should be able to create comfortable and suitable condition for their learners in learning vocabulary by choosing the appropriate strategy to improve their way of teaching. One of the alternatives is the use of CALL (Computer-Assisted Language Learning). In this study, CALL is applied by using one of English learning software, namely Rosetta Stone software. There are 6 learners from the 4th grade in one of Elementary schools in Kabupaten Bandung Barat who become the participants of this research. This study is conducted quantitatively by using experimental research design. In collecting data, this study employs tests, pre-test and post-test. It was found that there is a significant difference between the gained mean of pretest and posttest.Quantitative data analysis in t-test indicated a significant development of learners' vocabulary mastery at the end of the implementation of software. It means that the use CALL could be able to help learners improving their vocabulary enhancement.

Keywords: Young Learners, Vocabulary, CALL

INTRODUCTION

Vocabulary is a component of language and number of words in the communication. In recognizing new vocabularies, learners of foreign language can be confused even with much simpler text of unfamiliar or unclear words. Therefore, they need a sufficient mass of vocabulary to get them involved in foreign language and also to remember words and be able to recall them enthusiastically.

Vocabulary is extremely large and also varies. Nobody ever learns all the vocabularies in any language, but they can increase the number of vocabularies they have. Larger vocabulary the learners own can help them in many ways; learners' reading competence and writing competence will develop as they learn new words, and the more words they know the better their chance will be to do well on the vocabulary questions, in the school (Lehr & Hiebert, 2004; Neuman & Dickenson, 2011).

The notion on how children are able to acquire a language has become a concern of many background disciplines, including English education. It is perhaps due to the fact of children's characteristics that cost different process and different language

[1] Universitas Pasundan, Bandung, Indonesia, *E-mail: anggamaulana1985@unpas.ac.id*

[2] Sekolah Tinggi Keguruan dan Ilmu Pendidikan Siliwangi, Cimahi, Indonesia, *E-mail: siska.rizkiani@gmail.com*

learning outcomes. Hence, in developing the learners' vocabulary, an English teacher should be able to create comfortable and suitable condition for their learners by choosing the appropriate way (Harmer, 2001). One of many ways is by implementing CALL (Computer-Assisted Language Learning) that can help the learners to learn actively because of the minimum teachers' role and interactive learning situation (Yunandami, 2007).

In educational context, computer is considered necessary to make the process of learning easier and faster, as an effective teaching tool (Kenning &Kennimg, 1990; Smaldino & Russell, 2005; Egbert, 2005). Moreover, the assistance of computer in language learning can help the learners to be autonomous since it can deliver authentic input, provide meaningful language learning tasks, deliver feedback on those tasks and can be manipulated according to the needs of the user (Smaldino & Russell, 2005). However, CALL is still likely received a little attention in Indonesian EFL context.

Young learners' vocabulary mastery in certain linguistic focus is an interesting issue to study. Besides being interesting, such study can also be conducted in order to see whether the utilization of CALL could enhance the young learners' vocabulary mastery, especially when they have been in the formal stage (Pinter, 2006), at approximately the age of 11 or 12, when their awareness of linguistic elements has started to emerge (Pinter: 2006, Saville-Troike: 2006).

Based on the discussion above, this study is conducted to obtain the information about the effect of CALL for young learners in their vocabulary mastery.

LITERATURE REVIEW

CALL in EFL Classroom

Talking about the definition of CALL, Egbert (2005) states that CALL means using computers to support language teaching and learning in some ways. It can be applied to all language learning, skill areas, and contents. In addition, it is argued that CALL is any process in which a learner uses a computer and as a result, improves his or her language (Beatty, 2003), especially in assisting learners to better develop meta-cognitive and cognitive skills for inferring the English vocabulary meaning from a context (Ellis, 1995). In more specific way, Levy (1997) defines that CALL is a software tool designed to promote language learning and it is also seen as the field that covers "the search for the study of application of the computer in language teaching and learning" which has become the concern of this study. To sum up, CALL can be stated as the language and content settings in which technology are applied as effectively as possible to support language teaching and learning process and outcomes.

Here, the function of the computer is as tool or learning media in which it becomes the simulator, tutor, and feedback provider (Smaldino & Russell, 2005;

Dudeney & Hockley, 2007). Besides for the sake of practicality, the implementing of computer in a classroom was done due to some benefits, as suggested by Egbert (2005). Some of them are teachers can capture the learners' activity on the computers, has more opportunities and control in facilitating the interaction directly, can give feedback easier, and use a variety of group organization.

In implementing CALL in the classroom, the condition of learners, the amount of computer, the goals and the software used in the process of teaching and learning can affect the varies of teachers' strategy (Dudeney & Hockley, 2007; Egbert, 2005). Theoretically, The use of software in learning vocabulary can promote young learners learning through exploration, interactivity, trial and error, and repetition since the software heavily relies on images, animation, sounds, and other components that engage learners' senses (Zin & Zain, 2010). From the concept of learning while playing, educators and software designers have been forced to design fun learning for young learners. Since the early 1990s interest has surged in developing software in language learning. This is aimed at promoting students learning through exploration, interactivity, trial and error, and repetition in such a way that students get lost in fun. In other words, they do not realize that they are learning. The software is designed and developed to target parents and teachers and is specifically designed to promote education and amusement of learners through creating, using and managing proper technology course and resource.

It is expected that through the use of computer software which heavily relies on images, animations, sound, and other components can increase young learners' interest in and enthusiasm for language learning (Larsen, 1983; Ahmad, 2006; Warschauer & Healey, 2000). When students are highly motivated through rich, interesting, and engaging learning experiences, the understating of the subject is increased. It is in line with Zin & Zain (2010) who state that software provides immerse learning experiences so that students can acquire information in an exciting way.

Young Learners and Language Learning

Harmer (2007) and Pinter (2006a) in their book suggests that the term *young learners* refers to learners in the age between five until fourteen, while Cameron (2001) suggests that it refers to those learners between five until 12 years of age. Considering the setting of primary education in Indonesia embedded the conduct of the research, it can be implied that the term *young learners* refers to learners at primary school where mostly at the age of six until 12. Those who are in the secondary level, started at the junior high school level at the age of 13 or 14, still can be in the boundary of *young learners*, but in analyzing them it is also affected by the variable of early-teenage characteristic (Brown, 2001). Thus, the discussion under that range of age- at the junior high school level- will share a blur perspective for there is more focus to consider.

To deal with teaching young learners, children characteristics should be considered. Young learners come to class with an already well-established set of instinct, skills, and characteristics which will help them learn another language (Halliwell, 1992). They bring surprises and joyfulness every day. Every child brings a unique set of experiences and understandings to each new learning situation and gradually constructs his or her own view of the world. Some children grow faster; others need more time (Brewster & Ellis, 2000). Therefore, teachers who teach young learners need to know all the development differences and need to consider young learners' characteristics (Brown, 2001). They have to be ready to meet the unpredictable and very dynamic situation. Following are young learners' learning characteristics that are synthesized from different sources.

Conducting teaching of English in EYL class, as it is early proposed, brings its' own challenge and benefits. It is due to the characteristics of the children that can be either a booster or a hamper in achieving the desired goals. Several notions have been proposed by experts about the analysis of TEYL. Some have brought to a better understanding in valuing young learners which, hopefully, will finally lead to proper design and framework of the implementation of TEYL. In general, Jean Piaget (1896 – 1980) proposes two basic theories of young learners, each and every one of them brings its' own impact to the education practice in young learners class. First, children are active learners (in Cameron: 2001 and Pinter: 2006b). It means that children are actively making sense of their environment (Pinter, 2006b) through taking action to solve problems (Cameron, 2001). The active process of learning is conducted through the process of assimilation in which children create their own interpretation about their surrounding and the process of accommodation of the early interpretation. It can be confirmed through mistakes analysis, explanations, or any other insight forms that can either clarify or strengthen the early interpretation children have made.

As the consequence, TEYL should be able to have room for learners in making mistakes and errors in order to shape their own conclusion upon something. Besides, teachers in EYL class have to be able to recognize the mistake possibilities occur during both process of assimilation and accommodation so that they can provide suitable information or insight to assist the learners in their learning process.

Second notion proposed by Piaget is that children undergo several stages of development (Pinter, 2006b) starting from the *Sensory-motor* stage since they were born until the age of two; followed by the *Pre-operational* stage at the age of two until seven; and then *Concrete Operational* stage at the range of seven until eleven years of age; and finally *Formal Operational* stage since the age of 12 onwards. The notion brings its own impact to the conduct of TEYL especially in terms of the media choice. For instance, during the Concrete Operational stage in where learners have started to build up their ability in understanding immediate abstract theories, abstract learning materials can be introduced in the teaching learning process. In

the TEYL context, this stage of development allows teacher to 'introduce' learners to the abstract elements of speech such as the subject-verb agreement as long as the material still engages the here-and-now learning context.

In the process of memorizing, children also perform a distinctive process that will affect the way they acquire a language. Children memorize something by chunking the information before processing them into their mental process and later store them in either their short-term or long-term memory (Pinter, 2006b). The memorizing process suggests that children tend to break down the language elements into small parts before they finally memorize how to use them in an acceptable way based on what they have experienced. As the consequence in education practice, the learning material needs to be chunked into small parts and being exposed to the children repeatedly so that the learners will have more chances to experience language experiments. Mastering vocabularies, means being able to apply them in grammatical correct sentences, children need to be supported by a holistic language context that allows them to capture the overall language use started from its' derivations, embedded grammar structures, and so forth (Cameron, 2001; Pinter, 2006a).

Teaching English Vocabulary

Most children begin first grade with about 6,000 words of spoken vocabulary. They will learn 3,000 more words per year through third grade (Hutton, 2008).In learning a foreign language, vocabulary plays an important role. It is an element that links the four skills of language, listening, speaking, reading, and writing. Vocabulary is also one of common aspects of the foreign language learning. Without vocabulary, we cannot communicate effectively. Thus, the first step to learn English is learning vocabulary.

Moreover, there are some definitions of vocabulary. According to Kridalaksana (1993), vocabulary is a component of a language that maintains all of information about meaning and using words in a language. In another literature, vocabulary is the total number of words in a language (Hornby, 1995). Vocabulary is an important part to master English well. According to Kruise (2010), vocabulary, like grammar is an essential component of all uses of language.

Furthermore, vocabulary is the knowledge of words and word meanings (Lenr & Hiebert, 2004) which not only implies a definition, but also how that word fits into the world. Meanwhile, the vocabulary knowledge is commonly the language understanding as used in reading (Neuman & Dickenson, 2011). It is emphasized by Brown (2001) that text comprehension depends a lot on knowledge of the meaning of individual words in the text. Vocabulary knowledge is also involved in speaking, writing, or other means of communication. The more knowledge of word meanings a reader has the easier it will be to understand the text, what someone says and to express her/his idea in the target language. Vocabulary is not something

that can ever be fully mastered but it is something that expands and deepens over the course of a lifetime (Diamond & Gutlohn, 2006; Thornbury, 2002).

In the process of knowing a word, generally, one has to meet receptive vocabulary before the productive one. Commonly receptive vocabulary, including words that we recognize and understand when we hear or see, is larger than expressive or productive vocabulary referring to the words that we use appropriately in different context when we speak or write (Lehr & Hiebert, 2004; Neuman & Dickenson, 2011).

In recognizing words, it is not always necessary to have a complete form. The presence of partial information is often sufficient to recognize a word. Learners of second or foreign language can be confused even with much simpler text containing totally unfamiliar words or possibly unclear. Their problems will be complex when they need to produce language, using the correct form of a word for the meaning intended. Besides, lack of information is just insufficient for the item to be retrieved (Melka in Schmidt & McCharty, 1997; Cheng, 2011).

Therefore, they need a critical mass of vocabulary to get them over the entrance of the second or foreign language and also to remember words and be able to recall them readily. It is also necessary for them to develop strategies for handling gaps in word knowledge.

From the definitions above, it can be concluded that vocabulary is a component of language and number of words in the communication. Although vocabulary is the one that is emphasized, it does not mean other kinds of language components-grammar and pronunciation-are less important. All of these aspects are learned together, because they are attached one to another. Vocabulary is extremely large and also varies. Nobody ever learns all the words in any language, but they can enlarge the number of words they have. Larger vocabulary the learners have can help them in many ways; learners' reading ability and writing ability will improve as they learn new words, and the more words they know the better their chance will be to do well on the vocabulary questions, in the school (Lehr & Hiebert, 2004; Neuman & Dickenson, 2011).

In the literature, it is reported that vocabulary is an important component to master a language or to be able to speak in certain language, including English. Therefore, by mastering English vocabulary a child can speak English to express his/her feeling verbally. In line with Budiharso cited in Barska (2006) vocabulary is the basic component of language, one should have sufficient vocabulary in order to communicate and express the ideas effectively. Thus, if there is no adequate vocabulary, the communication cannot be built effectively.

METHODOLOGY

This study was aimed at the effectiveness of CALL use in improving learners' vocabulary mastery. This study used by employing the experimental design to

find the influence of CALL use in the controlled situation. In this study, the data was collected through tests (pre and post) which were supported by library research in order to meet its requirements as a quantitative research.

Specifically, the tests were administered before (pre-test) and after (post-test) the lesson. The pretest was administered to determine the ability of the learners before receiving the lesson. The pretest contained the vocabulary test. It was distributed to find out the starting point of learners' vocabulary score. Then, the lesson was arranged in the lesson plan. The lesson plan was implemented as guidance for teaching and learning process. As what is Harmer (2001) stated that the lesson plan can help teacher identify the aims and anticipate potential problems of the teaching. The lesson plan in this study was adapted from the lesson plan that is usually used in elementary school in organizing and sequencing materials to achieve the learning output. Finally, the researcher administered the posttest. The posttest was administered to the learners after receiving the lesson. The form of question on the posttest was same as the pretest item.

The tests were conducted to 6 learners as the representative sample of the whole learners involved. They are selected by using purposive random sampling. Two learners represented as high achiever, two were as mid-achiever, and the rest were low-achiever. The terms of high, mid, and low achiever of each learners gained from existed score that their teacher had. The lack of using technology in the site was the main consideration of conducting this study there.

This study applied one of English learning software as its instrument of the study, namely Rosetta Stone. As stated earlier that CALL can be defined as a software tool designed to promote language learning and it is also seen as the field that covers "the search for the study of application of the computer in language teaching and learning" (Levy, 1997), which has become the concern of this study.

The research employed Rosetta Stone. As it was stated in its website, Rosetta Stone was a form of proprietary computer-assisted language learning (CALL) software developed by *Rosetta Stone Inc*. This software combined the use of images, text, and sound, with progressive difficult levels that get along with the learner's progress. Such arrangement was created in order to teach various vocabulary terms and grammatical functions intuitively, without drilling or translating. The software method was designed to teach foreign languages like the way first language was learned.

In Rosetta Stone Version 3, instructions were arranged in the first language level, as compared to required materials of school syllabus. In this level, there were 4 units. This unit was divided into four core lessons. Each core lesson approximately took 30 minutes followed by sub lesson: Vocabulary. At the end of each unit was a Milestone, which was an interactive activity that reviewed the material covered in sub lesson of Vocabulary, as the focus sub lesson in this study.

In the Rosetta Stone Software there were five core lessons including milestone or test. In each core lesson consisted of nine sub lessons: pronunciation, vocabulary, grammar, listening and reading, reading, writing, listening, speaking, and review. Since the research question of this paper related to vocabulary, thus the material used in the observation was only sub lesson vocabulary of each core lesson. The vocabulary sub lesson consisted of seven slides. Each slide consisted of different materials. The lesson was started by greetings and introductory followed by pre-teaching in order to invite learners' curiosity to the material brought inside the class. Then, the software was turned on showing the first slide in the vocabulary sub lesson. In the end, there was Milestone or Review section that became the instrument of test in this study. It was applied in pre-test and post-test to measure learners' improvement in English vocabulary. To accomplish this test, learners were asked to click the correct English vocabulary based on the appropriate sounds and pictures in each slide. The responses given by the software to the learners' answer is different due to the correctness of the answers. In the end of the test, there would be a score as a result of their vocabulary mastery.

In data analysis, the data from the pretest and posttest were measured using the independent paired samples t-test formula in order to compare the significant mean difference between the two tests. The result of pretest and posttest scores was calculated by using t-test. They were statistically analyzed by using the paired sample t-test on SPSS 17 for windows Program with the level of significance =0,05 and the t critical with df = N-1.

RESULTS AND DISCUSSIONS

The vocabulary test was conducted before and after the implementation of CALL, namely pre-test and post-test. The pre-test was done on March 3rd, 2014. It was aimed to figure out the learners' achievement in vocabulary mastery before giving the teaching program. Meanwhile, the post-test was done on April 26th, 2014. It was aimed to figure out the result of the given implementation of CALL. Six learners were taken randomly to have this kind of tests. They are the representative of high achiever, mid-achiever, and low achiever, two learners for each level of achievement. It was expected to have the average percentage of the class achievement.

Before the implementation of CALL, the writer gave the learners a test. The test contained 20 questions that learners had to try to accomplish. The words were taken from the review section of Rosetta Stone, a language learning software that applied CALL. The questions were common vocabularies that learners might have known them or they have heard before.

The result of pre-test could be seen in the following table:

TABLE 1: RESULT OF PRE-TEST

Learners' code	*The number of question achievement*	*The percentage of question achievement*
Low achiever		
S1	5	25%
S2	7	35%
Mid-achiever		
S3	10	50%
S4	9	45%
High achiever		
S5	12	60%
S6	10	50%

From the table above (Table 1), S1 could only answer the questions intelligibly 5 of 20 questions and S2 could only answer 7 of 20 questions. For mid achiever, S3 could answer correctly 10 of 20 questions and S4 could answer 9 of 20 questions. Meanwhile, S5 could answer 12 of 20 questions correctly and S6 could answer 10 of 20 questions correctly. It could be seen that the learners' achievement on pre-test relatively less than average. In other words, the learners' ability in accomplishing the test before the teaching program is considered low.

Post-test was conducted after the teaching program. The researcher gave the same test to the learners to find out their improvement in vocabulary mastery. Here, the learners' mistake in answering the questions rapidly reduced and their ability improved. The learners answered the questions carefully and tried to catch the questions they did not know. The result was as follow:

TABLE 2: RESULT OF POST-TEST

Learners' code	*The number of question achievement*	*The percentage of question achievement*
Low achiever		
S1	12	60%
S2	15	75%
Mid-achiever		
S3	15	75%
S4	16	80%
High achiever		
S5	19	95%
S6	17	85%

It could be seen from the table above that the learners' mastery of vocabularies improved rapidly. S1 could answer the questions intelligibly 12 of 20 questions and S2 could answer 15 of 20 questions. For mid achiever, S3 could answer correctly 15 of 20 questions and S4 could answer 16 of 20 questions. Meanwhile, S5 could answer 19 of 20 questions correctly and S6 could answer 17 of 20 questions

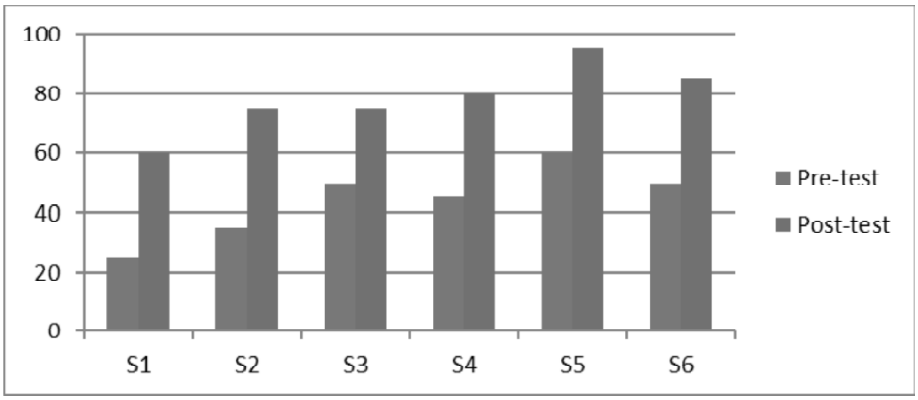

Figure 1: Learners' Improvement of Tests

correctly. Thus, compared to the result of pre-test, it is improved about 25% to 40%. The improvement could be seen in the following chart.

The implementation of CALL gave a good influence to the learners' vocabulary mastery. The data of tests showed that there was an increase on learners' score in the post test. This improvement lead to the conclusion that CALL contained in Rosetta Stone language learning software could be able to help learners improve their vocabulary mastery.

Moreover, the use of CALL in Rosetta Stone langage learning software in helping learners to improve their vocabulary mastery can be indicated from the value of t-test. As Hatch & Farhady (1982) suggest in conducting t-test, the variance score should be equal and normal distributed. Therefore, pretest and posttest scores were computed to find out the normal distribution and the variance homogeneity, then, the calculation of paired sample t-test can be conducted. The data from vocabulary test were analyzed in two steps. The steps in analyzing the data from tests were as follow.

The first step was calculating the learners' pretest and posttest scores, this was aimed to calculate the learners' answer. The second step was calculating the normal distribution test to find out whether or not the scores are normally distributed (Hatch & Farhady, 1982; Sugiono, 2007). The normal distribution was computed through Kolmogorov-Smirnov formula at level of significance .05 by using SPSS 17.0 for windows program. The result of normal distribution test is given in the following table.

The table above (Table 3) shows the result of a normal distribution test. In the column Kolmogorov-Smirnov, it can be seen that the significance level for pre-test is 0.978, meanwhile the significance level for posttest is 1.000. Since the significance level for both test are more than 0.05, then it can be concluded that

TABLE 3
THE RESULT OF NORMAL DISTRIBUTION TEST
One Sample Kolmogorov-Smirnov Test

		Pretest	*Posttest*
N			
Normal Parameters cu	Mean	6	6
	Std. Deviation	50.9091	71.6364
Most Extreme Differences	Absolute	12.00379	14.34763
	Positive	.143	.097
	Negative	.143	.085
Kolmogorov-Smirnov Z		-.139	-.097
Asymp. Sig. (2-tailed)		.475	.321
		.978	1.000

the data from pretest and posttest scores are normally distributed (Collidge, 2000) and fulfill the criteria underlying t-test (Hatch & Farhady, 1982).

Since the variance's scores were normally distributed, the paired sample t-test by using SPSS 17 for windows program can be conducted to calculate and compare the pretest and posttest scores. The paired t-test was aimed to investigate whether or not te pretest and posttest means are significant (Hatch & Farhady, 1982; Sugiyono, 2007). Data analysis on posttest score was conducted to find out whether or not there is difference in scores achieved by learners before and after the implementation of CALL in Rosetta Stone. Table 4 below shows the statistic of the scores, while table 5 shows the result of paired t-test.

TABLE 4: THE RESULT OF PAIRED SAMPLE STATISTIC
Paired Sample Statistics

		Mean	*N*	*Std. Deviation*	*Std. error Mean*
Pair 1	Pretest	50.9091	6	12.00379	3.61928
	Posttest	71.6364	6	14.34763	4.32597

TABLE 5: THE RESULT OF PAIRED SAMPLE T-TEST
Paired Samples Test

		Paired Differences							
		Mean	*Std. Deviation*	*Std. Error Mean*	*95% Confidence Interval of the Difference*		*T*	*Df*	*Sig. (2-tailed)*
					Lower	*Upper*			
Pair 1	Pretest Posttest	20.72727	14.22034	4.28760	-30.28063	-11.17392	-4.834	5	.001

Table 4 shows the general statistics of pretest and posttest scores. The mean of pretest is 50.91 and the mean of post test is 71.64. Furthermore, table 5 shows the result of paired sample t-test. Based on the t-table, the tcrit for df = 5 at the level significance 0.05 is 2.571. table 4.6 shows that the tobt is -4.834 and P value 0.001. Since tobt > tcrit (4.834 > 2.571) and *P* value is lower than 0.05 (0.001 < 0.05). It means that there is a significant difference between the mean of pretest and posttest (Collidge, 2000). It also shows that the use of CALL in Rosetta Stone language learning software can help learners to improve their vocabulary mastery.

In summary, quantitative data analysis in t-test indicated a significant development of learners' vocabulary mastery at the end of the implementation of CALL. Thus, it can be concluded that CALL in Rosetta Stone language learning software could be able to help learners improving their vocabulary mastery.

CONCLUSION AND SUGGESTION

Based on the t-table, the tcrit for df = 5 at the level significance 0.05 is 2.571. table 4.6 shows that the tobt is -4.834 and P value 0.001. Since tobt > tcrit (4.834 > 2.571) and *P* value is lower than 0.05 (0.001 < 0.05), it means that there is a significant difference between the mean of pretest and posttest (Collidge, 2000). It also shows that the use of CALL in Rosetta Stone language learning software can help learners to improve their vocabulary mastery.

For pedagogical implications of the study, CALL in Rosetta Stone language learning software can help young learners improve their vocabulary mastery and bring an enjoyable and motivating learning. The method in Rosetta Stone language learning software also obtain the positive feedback from learners, thus the use of CALL in teaching vocabulary to young learners is recommended. Furthermore, it is urged that the teacher who implements CALL in Rosetta Stone language learning software in teaching foreign language to young learners should be creative in planning the lesson, selecting appropriate slides, and organizing the activities. Those creativities can give better guidance in implementing the teaching program, give the learners the appropriate slides with their needs, interests, and in particular the curriculum, link the lesson to their own experience and overcome the resistance to the foreign language. In this case, CALL can enhance the learners' motivation to get engage in the meaningful, contextual activity, and the same time, challenging.

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