

ORIGINAL ARTICLE

The Role of Semantic Mapping Strategy Training on Students' EFL Vocabulary Development

Leul Abate¹ & Yohannes Tefera²

Abstract

This study examined the role of semantic mapping in cultivating the vocabulary competence of grade 8 students of Arsi Negelle Number 1 Elementary School. The sample of the study consisted of 112 students enrolled in two sections, which were randomly selected from five sections and assigned to both treatment and control groups. Quasi experimental design was used in this study. A vocabulary pre-test was given to both groups at the beginning of the study to make sure that they were equivalent and homogenous at the initial stage of the study. The treatment group received semantic mapping as vocabulary teaching/learning technique, but the control group did not receive this treatment. At the end of the study, the same test was given to the two groups to investigate the effect of semantic mapping vocabulary teaching technique in cultivating their word knowledge. The results revealed significant differences between the groups in favor of the treatment group, that is, the treatment group outperformed the control group in vocabulary learning. Therefore, it can be suggested that semantic mapping can be used as an efficient technique for vocabulary teaching.

Introduction

English is a language of education, business transactions and other activities in many countries. Therefore, the mastery of English language is very important.

Similarly, it plays significant roles as a foreign language in Ethiopia especially in the educational system. However students' language competency is not as such satisfactory in most schools.

**Jimma University, College of Social science and Humanities, Department of English.
E-mail: yohatef@yahoo.com*

The researchers observed that most students face problems in effective use of the language in communication with their teachers, friends and others. This communication failure might be due to lack of adequate vocabulary knowledge which is mandatory to facilitate communication.

Vocabulary is a central element of language skills and provides much of the basis for how well learners communicate with each other (Khoii and Sharififar, 2013). In this regard, Nation (1990) forwards that students need to acquire good vocabulary knowledge to succeed well in the other skills. Similarly, Bowen and Marks note that “words are the basic of language, and thus the basic of communication,” 2002, p. 106). Vocabulary is a core element of language proficiency that provides major basis for learners’ effective communication (Khoii and Sharififar, 2013). According to Zimmerman (2007), vocabulary is a set of words that are the basic building blocks used in the generation and understanding of sentences. Thus, an increasing attention has been given to vocabulary teaching and learning as of the mid of 20th century (Carter and McCarthy (2002).

There are wide ranges of vocabulary teaching strategies, and teachers are responsible to select and use appropriate vocabulary teaching strategies that help learners to retrieve and organize the acquired words for further use. Semantic mapping is one of the explicit vocabulary teaching techniques that help students to learn and recall previously learned words for current use. According to Lewis (1993, p.118), Semantic mapping is, perhaps, the main way of organizing lexical content because there is an explicit organizationally principle and coherent real world context it has obvious advantages over randomly occurring vocabulary.

In general, there are ample merits which make semantic mapping vocabulary strategy one of the best techniques in vocabulary instruction. It helps learners recall and organize second language vocabulary; it promotes vocabulary retention (Baleghizadeh and Naeim, 2011), and it facilitates retrieving words or concepts they know in separation and in situation (Chu-Chang, et al. 1982).

Most research findings reveal that semantic mapping is one of the effective vocabulary teaching techniques which enhance learners’ vocabulary knowledge which in turn is very crucial for language proficiency. Baleghizadeh and Naeim (2011) studied two reasons for the effectiveness of semantic vocabulary teaching technique. First, semantic mapping has both a meaningful and a mechanical aspect. It is meaningful in the sense that words are presented according to the meaning-based relationships among them, and it is mechanical in the sense that the words still need to be practiced out of a context. The second reason that makes semantic mapping effective is its cognitive feature. Margosein, et. al. (1982) confirm that unlike the traditional vocabulary teaching techniques: dictionary-definition-plus-example approach, or other strategies like the context clue approach, semantic mapping has a greater impact on vocabulary acquisition because it motivates the students to call back their prior knowledge to new words and to create lexical net work among words. Furthermore, conducting a study on EFL students, Sanchez (as cited in Zarei and Adami, 2013) concluded that learning vocabulary with semantic mapping causes changes in learners’ cognitive structures in their mind. Therefore, semantic mapping can be used effectively and sufficiently by teachers at all levels to motivate and invite learners’ active participations (Johnson and Person, 1978).

Semantic mapping, which involves drawing learners' attention to the interrelationships among lexical items, is claimed to enhance vocabulary learning significantly; when we compare it to the traditional approaches, semantic mapping notably improves vocabulary learning of EFL learners (Amiri and Abdollahzadeh, 2009). Therefore, as it fosters vocabulary retention, it can be used as a well-organized methodology for vocabulary instruction (Abdelrahman, 2013).

Hypotheses

This study tried to find out whether there is a statistically significant difference in vocabulary achievement tests between 8th grade students who were taught vocabulary via two different techniques: semantic mapping, and the usual vocabulary teaching techniques. Consequently, the following null and alternate hypotheses were proposed.

H₀:

There is no significant difference in vocabulary achievement tests results between grade 8 students who learn vocabulary through semantic mapping technique and those who learn vocabulary via the usual strategies at 5% level of significance.

H₁:

There is significant difference in vocabulary achievement tests between grade 8 students who learn vocabulary through semantic mapping technique and those who learn vocabulary via the usual strategies at 5% level of significance.

METHODOLOGY

Research Design

The study used a pre-post test quasi experimental research design with a control

group. This is because quasi experimental design has ample merits that make it useful to investigate the research problem. According to Gorard (2003), this research design is preferred due to some four advantages. These are its suitability to test cause and effect, its flexibility to allow any number of different groups and variables, its openness to operate any kind of measures, and its comparative simplicity of data analyses. Moreover, despite some extraneous and confounding variables which might affect the internal validity, the absence of random sampling in quasi experimental research design allowed the research to be more feasible (Creswell, 2012).

Participants of the study

The participants of the study were 112 grade eight students in Arsi Negelle Number 1 Elementary School. The students were attending their lessons in two different sections: 8B and 8E. The former were selected as a treatment group and the later as control group through random sampling via lottery method.

Instruments used

Data were collected using a test (pre-posttest). Thus, a vocabulary test which consisted of 25 dictation, matching, multiple choice, and gap filling items was designed for both the treatment and the control group. The same test items were employed for both the pre/post-test. Moreover, all the words on the vocabulary test were drawn from the vocabulary lessons of unit 8 and unit 9 of the grade 8 English students' text book. These vocabulary lessons were addressed in both groups. The researcher tried to include all these words in the test.

The tests were administered to both the treatment and the control groups. The purpose of the pre test was to assess the vocabulary knowledge of participants in

the two groups so as to check their homogeneity in word knowledge. After the intervention was over, the post test was given to both groups. The post test was aimed at checking the improvement attained as a result of the treatment which had been given to the treatment group.

Validity and Reliability of the Instrument

A pilot study was held to check the reliability of the tests (pre-post test). This was to examine the stability of the pretest-posttest because “a reliable test is a consistent... tool” (Brown, 2004 p.19). In order to ensure the reliability of the pre-posttest of the study, the researcher administered a test-retest on an experimental sample of thirty eight grade 8 students who were from Arsi Negelle Number 2 Elementary School. And the scores from the two tests were correlated using Cronbach alpha to investigate the significant difference between them. The result was (0.806) which is a high internal contingency coefficient. This was very appropriate for the reliability of the test and for the purpose of the study.

Data Collection Procedures

A pre test that contained 25 test items and aimed at investigating the homogeneity of learners’ vocabulary knowledge was given to both the treatment and the control group. Following the pre test, three vocabulary lessons were given to the treatment group using semantic mapping techniques while the control group continued with the usual vocabulary teaching techniques. In other words, each treatment of the intervention process was presented through semantic mapping vocabulary teaching technique with a six step procedures (Nation, 2008). After the intervention was done and the completion of the vocabulary lessons by the control group was ensured, both the treatment and the control groups sat for the post test. For the post-test, similar items, were employed which were used for the pre test. Like in the pre-test, four volunteer teachers were involved in giving the test. Two invigilators were assigned for each section. At the end of the exam, answer sheets were collected properly and submitted back to the researcher. Then the pre- post test scores of the groups were compared using paired t- test.

RESULTS

Results of the Pre-Post Tests

The results of the pre-test concerning the mean scores of the two groups are shown below.

Table 1: The results of the Pre-Test

Group	N	Mean	SD	t-test	df	p
Treatment	57	9.75	3.43	-0.145	110	0.89
Control	55	9.84	3.84			

Table 1 reveals that the mean score of the treatment group was 9.75 with a standard deviation of 3.43, and the mean score of the control group was 9.84 with a standard deviation (SD) of 3.43. It also shows that the difference in the mean scores between

the treatment group and the control group was not statistically significant ($t = -0.145$, $p = 0.89$). As the t-value -0.145 falls in the critical region, the result of the pre-test of the control and the treatment group shows that the two groups were equivalent in their

vocabulary achievement before conducting the experiment. Hence, this could be evident to claim that the students were nearly at the same level of word knowledge.

Results of the Post-test

After conducting the treatment for three periods, a post-test was administered to the

two groups of the study to compare their lexical performance. Therefore, to test the hypotheses, the post-test performance mean scores of the control and the treatment group were compared. The results of the analysis of the posttest scores are shown in Table 2 below.

Table 2: The overall results of the post test

Group	N	Mean	SD	t-test	df	Sig(2-tailed)
Treatment	57	19.25	4.63	3.84	48	0.00
Control	55	16.13	3.91			

As it is indicated in Table 2 above, the post-test mean score results of the two groups were compared. The mean score of the treatment group was 19.25 with a standard deviation of 4.63, while the control group's mean score was 16.13 with a standard deviation of 3.91. It also shows that the difference in the mean scores between the treatment group and the control group was statistically significant ($t= 3.84, p= 0.00$). The difference in the performance of the two testes supports the researchers' hypothesis. Hence, the null hypothesis was rejected. It was concluded that the treatment brought about a significant difference in vocabulary knowledge between the two groups.

DISCUSSION

The findings of the study indicate that there were statistically significant differences between the treatment group and the control group. The mean score of the students in the treatment group on the vocabulary knowledge post-test was 19.25. It is considered higher than the mean scores achieved by the students in the control group which was 16.13. The t-value calculated on the t-test is 3.84 showing a significant difference at ($\alpha=.05$) as illustrated in Table 2 above. This indicates

that the treatment group demonstrated significant superiority over the control group with regard to the scores obtained in the post-test. In other words, the results are in favor of employing semantic mapping strategy in teaching vocabulary items. This means that employing semantic mapping in EFL classes is worthwhile, and more effective than employing the usual vocabulary teaching techniques. Consequently, the null hypothesis is rejected while the alternative one is accepted.

The results of the post test indicated that utilizing semantic maps in vocabulary instruction improves word learning and vocabulary retention for the treatment group. In addition to this, the finding of this empirical study is in line with previous research findings concerning the effect of semantic mapping in enhancing vocabulary learning (Anders, Bos and Filip, 1986; Stahl and Kapinus, 1991; Margosein, Pascarella, and Pflaum, 1982). Likewise, Margosein, et. al (1982) and Vogt (1983) confirm that semantic mapping has a greater impact on vocabulary acquisition than the traditional techniques..

Research from the 1980s consistently supports the benefit of semantic mapping

for vocabulary learning, and it has got significant effects for teaching context rich or target-word treatment in junior high school students (Margosein et al. 1982). Semantic mapping enhances vocabulary learning (Abdollahzadeh and Amiri, 2009). Therefore, using semantic mapping can be a helpful means of enhancing students' vocabulary knowledge. This positive impact of semantic mapping strategy can be attributed to the fact that in semantic mapping the relationships between words are explored, thus, more ties among them are made in the vocabulary knowledge network of the learner. In other words, semantic mapping is a graphic arrangement of words that shows how new words and ideas related to each other with in text (Johnson and Pearson, 1978). It is also a strategy of meaningful handling of words and reflects how words can relay to each other in a range of ways (Oxford, 1990).

CONCLUSION AND RECOMMENDATION

As the data from the pre-post test revealed, the independent variable (semantic mapping) affected the dependent variable (vocabulary knowledge). Therefore, the implementation of semantic mapping has improved the students' vocabulary knowledge. It was revealed through the upgrading scores from the post-test. The mean score of the treatment group was 19.25 with a standard deviation of 4.63, while the control group's mean score was 16.13 with a standard deviation of 3.91. It was also statistically significant ($t= 3.84$, $p= 0.00$).

Therefore, it is recommended that English language teachers should use semantic mapping as an alternative technique in teaching vocabulary because using semantic mapping in teaching vocabulary is an effective technique to increase

students' word knowledge achievement. In addition to this, we need to train students on semantic mapping techniques in their classroom as this provides them with enhanced vocabulary knowledge.

REFERENCE

- Abdelrahman, O. M. (2013). The effect of teaching vocabulary through semantic mapping on EFL learner awareness of vocabulary knowledge. *Journal of Education*, 2 (7).
- Amiri, N. & Abdollahzadeh, E. (2009). The effect of semantic mapping as a vocabulary instruction technique on EFL learners with different perceptual learning styles. *The Journal of Applied Linguistics*, 2 (1).
- Anders, P. L. & Bos, C. S. (1986). Semantic feature analysis: An interactive strategy for vocabulary development and text comprehension. *Journal of Reading*, 29(1), 610-616.
- Baleghizadeh, S. & Naeim, M. Y. (2011). Enhancing vocabulary retention through semantic mapping: A single-subject study. *The International Journal - Language Society and Culture*, LSC.3(2).
- Bowen, T. & Marks, J. (2002). *Inside teaching: options for English language teachers*. Oxford: Macmillan Heinemann.
- Brown, H. D. (2004). *Language assessment principles and classroom practices*. New York: Longman.

- Carter, R. and McCarthy, M. (2002). *Vocabulary and language teaching*. London: Continuum.
- Chu-Chang, Tsui, Yin, Chien, & Chin. (1982). Studies of vocabulary development in the United States of America and the Republic of China. ERIC document reproduction service, Retrieved October 19, 2013 from <http://www.eric.ed.Gov/ERICWebPortal/recordDetail?Acno=Ed227679>
- Creswell, J. W. (2012). *Educational research: planning, conducting, and evaluating quantitative and qualitative research*. (4th edition). Boston: Pearson Education.
- Gorard, S. (2003). *Quantitative methods in social science*. London: Continuum.
- Johnson, D. & Pearson, P. D. (1978). *Teaching reading vocabulary*. Cambridge: Cambridge University Press.
- Khoii, R. & Sharififar, S. (2013). Memorization versus semantic mapping in L2 vocabulary acquisition, *ELT* 67(2).
- Lewis, M. (1993). *The lexical approach: the state of ELT and a way forward*. London: Commercial Color Press.
- Margosein, C. M. et al. (1982). The effects of instruction using semantic mapping on vocabulary and comprehension. *Journal of Early Adolescence*, 2(2), 185-194.
- Nation, I, S, P. (1990). *Teaching and learning vocabulary*. Boston: Heinle and Heinle.
- _____ (2008). *Teaching vocabulary: strategies and techniques*. Boston: Heinle.
- Oxford, R. and Scarcella, R. C. (1994). Second language vocabulary learning among adults: state of the art in vocabulary instruction, *System*, 22(2), 213-241.
- Oxford, R. L. and Crook all, D. (1990). Vocabulary learning: A critical analysis of techniques, *TESL Canada Journal*, 7(2) 9-30.
- Vogt, D. (1983). Semantic mapping as a vocabulary teaching technique to improve recall of word meaning. Retrieved June 3, 2004, from ERIC.
- Zarei, A, A. & Adami, S (2013). The effects of semantic mapping, thematic clustering, and notebook keeping on L2 vocabulary recognition and production. *Journal on English Language Teaching*, 3(2).
- Zimmerman, C. B. (2007). *Vocabulary learning methods*. Cambridge.