

Research paper


Using Map Concepts and Wordlists Techniques in Developing Iranian Learners' Writing Skills

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Abstract

Learning writing could be based on learners' domain of vocabulary as a major component affecting writing skills. In the present study, the focus is put on vocabulary gain that is affected by two techniques of map concepts and wordlists in developing vocabulary among Iranian EFL learners. A quasi-experimental study with pre and post-test procedures was applied and 75 participants were recruited in three equal groups including map concepts (MC), wordlist (WL), and a control group (CG). They received three types of instructions. There were two experimental groups including map concepts and wordlists who received treatment and a control group who received some placebos and received traditional vocabulary instruction on writing such as brainstorming, pre-writing activities, and designing the sentences and paragraphs. Treatment lasted 12 sessions and each session took 45 minutes in which they were given the topics to write 150-word essays. Before starting the treatment, a pre-test on a one-paragraph essay was taken from the three groups to evaluate their writing skills before the treatment. The topics were selected based on the learners' writing course book. The three groups worked on the same topics on the pre and post-tests. The writing checklist was used to score the essays. Finally, a post-test was conducted to measure the effect of instructions on the learners' writing skills among the groups. Findings revealed CM was the most effective strategy to enhance learners' writing accuracy.

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Introduction

Learners' mastery of vocabulary knowledge in writing is considered quite prominent in learning writing skill (KamaliKhalavi & Zeraatpishe, 2023). As Read (2000) states, "Words are the basic building block of language (p. 1)". It means that without the mastery of vocabulary, mastering a language will not be possible. Mastering a great number of vocabularies helps learners to master other language skills, especially writing skill. Read (2000) argues that to read an unfamiliar text independently, learners should know at least 95% of the running words. Nation (2008, p. 83) estimates that the vocabulary knowledge of at least 3,000 words is necessary for EFL learner to cover their learning needs. Nation (2008, pp. 7-8) explains that the 3,000 words consist of 2,000 words of high frequency words and 1,000 words of academic word-list.

Map concepts are techniques of forming ideas in a method which allows L2 learners to emerge plainly and rationally. The concepts form in an organized manner to make clusters or concept webs regarding a theme or topic and connected subdivisions of that subject and show how the ideas are connected as a schema (Sturm & Rankin-Erickson, 2002).

Nation (2008) believes vocabulary as a productive entity and it can be used for speaking and writing, while receptive vocabulary is used for listening and reading. He notes that usually learners' receptive vocabulary is much larger than their productive vocabulary. However, turning receptive vocabulary into productive vocabulary is valuable, especially in writing. He argues that the ability to use vocabulary in writing, especially the academic one, is a way of showing membership of the academic community. In short, he concludes that the ability to use vocabulary of the Academic Word List in writing is a reasonable goal for learners.

Based on the previous studies on vocabulary and writing, this study aims to investigate and analyze the effect of two different vocabulary-learning strategies, namely map concepts and wordlists strategies on the Iranian EFL learners' vocabulary learning. In addition, decide which one of these strategies result better in learners' ability to use vocabularies in meaningful correct sentences in writing.

According to Sturm and Rankin-Erickson (2002), map concepts were proposed to confront the non-meaningful learning and metacognitive activities in learning writing skill (Wenden, 1987); therefore, researchers had to find a way to offer the concept perception to facilitate the ease of writing tasks. Although concept maps have been widely and successfully used as a powerful educational tool in different fields of education (Rueda, et al. , 2009), research shows that most of the application have been in the scientific and technological areas, and less attention has been dedicated to humanistic science such as literature, history and teaching second language.

Consequently, lack of writing skill is a major problem for Iranian students that need to be solved. One way of looking at writing is from the angle of lexis, actually, there are words which we use to write, and the knowledge of these words definitely affects our writing quality. In

Iran, writing is a serious obstacle for Iranian University students, and having a poor writing skill may hinder their post-graduate studies not to mention their career opportunities. In spite of having writing and advanced writing courses, these students have a long way to master writing as they supposed to. Thus, this study aimed to examine the effect of two vocabulary strategies namely, map concepts and wordlists strategies on Iranian EFL learners writing skill.

Literature Review

Learning a second language and new words helps learners become better at writing, so they can understand things like a native speaker and write their ideas effectively. So, they need to find out how many words native speakers know. In a study of how many words native speakers should know, Nation and Waring (1997, as cited in Schmitt, 2000) found that on average, a person who speaks a language from birth knows about 20,000 words. They also expected that the person would learn about 1,000 more words every year. A person will keep learning new words during their whole life (Hughes, 2003).

Nation (2006) states that if learners want to understand something well, like a conversation or a book, they should know almost all of the words used. That means about 98% of them. To have this number in writing, students need to learn about from 8,000 to 9,000 words. Students must comprehend 5000 to 7000 words to listen and recognized sentences well. Nation and Waring (1997) note that learners who have a smaller vocabulary of words; for example, 2,000 to 3,000 words need to know more than this if they want to understand English without any difficult. Thus, they need to learn more vocabulary.

Nobahar, et al. (2013) studies the use of concept maps among Iranian students who are learning English and found Iranian learners feel more confident in their abilities and write more accurately. They wanted to find out if intermediate EFL learners' writing accuracy improves when they use concept mapping. 180 students took a test on their writing skills and answered a questionnaire about how confident they felt. Then they chose 60 learners who were the same level in English and gave them a test and a questionnaire. Then they split them into two groups randomly: one group as experimental and another as a control group. Learners in both groups were given a writing assignment in addition to their textbook assignment. The students in the experimental group dealt with drawings and concepts maps to show their ideas after they wrote each assignment. They also talked, practiced exercises, and thought about what they learned. The control group worked on their textbook exercises and did not receive map concepts. Finally, all participants were given a writing posttest and a questionnaire to see how well map concepts worked. The study found that using concept maps helped learners write better and feel more confident about their writing. The study showed that students who used concept mapping did better in writing than those who did not use this method to plan their writing. This research showed that using concept maps can help learners acquire new words and also improve their writing skills. The researchers found that making maps of ideas could be a good way to help learners feel more skilled and confident at writing in a second language. This could be especially helpful for EFL learners who are at an intermediate level.

According to the gap existing in the literature, the present study is aimed to investigate and analyze the effect of two different vocabulary learning strategies in writing- namely map concepts and wordlists strategies-on the Iranian EFL (English as a Foreign Language) learners' writing accuracy. In addition, decide which one of these strategies result better in learners' ability to use lexemes in writing. This study seeks to explore the following research questions: RQ. Do map concepts and wordlists techniques significantly affect Iranian EFL learners' writing skill?

Methodology

Participants

The research was done at Islamic Azad University of Abadan. We recruited 75 students who participated voluntarily in the study by filling in consent letters. They were in their second year of studying English majoring in teaching EFL and aged between 21 and 53 years old. They had all enrolled in a writing course at the academic year of 2023. The students who scored the band score of Oxford Placement Test (OPT) at the pre-intermediate level (i.e., between 30 and 37 out of 60) were selected for the study. They were assigned into three groups based on random sampling procedure, with two groups of experimental (MC and WL) and one control group (CG). Each group included the following number of participants. Map concepts group (20 females and 5 males) received map concepts strategy while the wordlists group (18 females and 7 males) received wordlists strategy. In addition, the control group (17 females and 8 males) received traditional instruction on writing such as sentence and paragraph writing. In the present study gender, age, and family status were not considered in the research processes (Creswell, 2020).

Instrumentation

Pre-test

In the pretest, the students were supposed to write a short essay on the given topic. Before writing, they were informed to choose words and write map concepts and wordlists lists and then did this. To do this, the participants were given three topics and they had to create maps or lists before writing about the topics. For the CG, this is not the case. They just wrote the 150-word essays based on the given topics. The writings of the participants were assessed through a writing checklist (Jung, 2001) and were analyzed considering both accuracy measures. The inter-rater reliability coefficient of the pre-test was calculated by Pearson correlation analysis as ($r = .83$)

Post-test

Finally, a post-test was used to determine the effects of treatment period and the result of the instructions. The same topics like the pretest were given to the participants and they were asked to use one of them in writing 150-word essays. Two raters other than the researcher rated the essays to measure the reliability of the scoring. The inter-rater reliability coefficients of the test were calculated through Pearson correlation analysis as ($r = .85$).

Procedure

Before writing a 150-word essay, 120 students in their second year of study were given OPT to make sure they had the same proficiency level. The researcher chose students whose scores were in the pre-intermediate band score. Learners were assigned into three groups: one control group and two experimental groups called "map concepts" and "wordlists". There were 25 learners in each group. The research project happened in 12 weeks. The lessons happened every week and lasted for 45 minutes. The same teacher taught all three classes so there would not be any difference in how they were taught. The materials and time allocation were the same in three groups as well.

First, learners took a test that lasted for 30 minutes. Afterward, two raters scored all the essays based on the checklist (see the Appendix). The final score (40) was found by adding up both raters' scores and dividing by two to get the average score for each essay in the pretest and posttest.

The groups received some instruction on the research procedure in the first week. Each group was briefed with the map concepts and wordlists strategies they were supposed to use during the treatment period. The purpose of that briefing was to make sure all the participants have the necessary knowledge to make use of those strategies.

At the beginning of each session in the map concepts group, the instructor briefly reminds the participants of the context clue and the word collocations that they may use to extract the meaning of the related words. To give them the examples on map concepts and wordlists, the instructor gave them 10 words printed in bold in a text to show the word relations in the text. They had 15 minutes to write a one-paragraph essay with the central words in the map to write a one paragraph essay using the same 10 words.

In the wordlists group, participants were reminded again how lists work and how they can help them in understanding the words that was the intended vocabulary to be comprehended. Then the 10 words given to the participants and they were wanted to 15 minutes to grasp the meanings and 15 minutes to write a one-paragraph essay concerned with the meanings of the words. The CG passed similar class activities like the other groups and they were asked to write a one-paragraph essay (150 words) using those words. However, they had to do that without the aid of texts or maps.

After the treatment was done, the participants had to write an essay as a posttest. They had to do this before and after the study to write a 150-word essay. The participants' writings were checked and corrected using a writing checklist and they were scored by two university teachers other than the researcher. They checked for mistakes, errors, vocabulary, grammar, mechanics of writing, organization, spelling, etc. They also looked at how well the style of writing was done. The scores were collected to see which group did better at the posttest using the words correctly in their writing. To find out if there were any differences between the three groups, one-way ANOVA was run as an inferential analysis that compare the groups' means o

scores in the pretest and posttest. A follow-up test called Scheffe was used to see if one treatment worked better than the others.

Results

Pretest of Writing Essays

In the beginning of the study, there were three groups who took a pretest to determine their vocabulary knowledge and writing ability at the beginning of the study. The information about how they did is shown in Table 1.

Table 1.
Descriptive Statistics in Pre-test Scores

Groups	N	Mean	SD	Min.	Max.
MC	25	27.19	1.85	15.00	39.00
WL	25	22.28	2.00	11.00	35.00
CG	25	25.90	1.51	10.00	38.00
Total	75	25.12	1.28	10.00	39.00

There are 25 students in three groups, as shown in Table 1. At first, we found out what score each student got on a test before they started learning. It is figured out that the average score and how much the numbers varied for each group by using descriptive statistics called mean and standard deviation (SD). The study found that all three groups had similar average scores of 25.12 and there was no big difference between them. The number that is called "standard deviation" (SD) and found that the control group had a higher SD (1.516) than the other two groups. The group who studied wordlists had the lowest SD (1.28) out of all three groups. To see if there was a big difference in how well three groups did, we did a test called One-way ANOVA. Two things to be understood in the results: the mean squares and a number called F-ratio. Table 3 shows the outcomes of the One-way ANOVA of the pretest in Table 2.

Table 2.
One-way ANOVA (Pre-test)

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	271.65	2	135.82	1.60	.20
Within Groups	5075.33	72	84.58		
Total	5346.98	74			

Table 2 shows the comparison of the scores in three groups before they started a test. The test results of the learners' scores did not confirm a significant level. This means that there was not a greater enough to make a difference between the groups being compared as ($F= 1.60$, $p=.20>.05$) with $df= 2/72$. In other words, there is no significant difference among the three groups in the pretest.

Posttest of Writing Essays

The descriptive statistics for the three groups on the post-test are presented in Table 3.

Table 3.*Descriptive Statistics in Posttest Scores*

Groups	N	Mean	SD	Min.	Max.
MC	25	33.80	4.98	23.00	38.00
WL	25	26.90	8.47	12.00	35.00
CG	25	22.71	9.46	11.00	38.00
Total	75	28.47	8.75	10.00	39.00

Table 3 indicates the map concepts group's mean is different compared to two other groups, but wordlists and the control groups' means are close to each other. The average number of words in the map concepts, wordlists, and control groups are 33.80, 26.90, and 22.71 respectively. In other words, the mean of the control group is less than the average score of the two groups' means. To see if the three groups are significantly different, One-way ANOVA measure data to figure out if the test results are at the significant level in Table 4.

Table 4.*One-way ANOVA (Post-test)*

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1111.81	2	555.90	9.55	.001
Within Groups	3025.89	72	58.19		
Total	4137.70	74			

Table 4 shows that the three groups' comparison. The P value is at the significant level as ($F=9.55$, $p=.001<.05$) with $df=2/72$. This means that there is a significant difference between the average scores of the three groups. To figure out which group did better after the posttest, Post-hoc Scheffe should be run. Therefore, the means are compared to one another and examine the effectiveness of each group's mean. Results are shown in Table 5.

Table 5.*Post-hoc Scheffe*

I	J	Mean Difference (I-J)	Std. Error	Sig.	Lower Bound	Upper Bound
MC	WL	6.90*	2.38	.020	.90	12.91
	CG	11.09*	20.63	.001	4.46	17.72
WL	MC	6.90	2.38	.020	12.91	.98
	CG	4.18	2.65	.298	2.51	10.88
CG	MC	11.09*	2.63	.001	17.72	4.46
	WL	4.18	2.65	.298	10.88	2.51

*. The mean difference is significant at the 0.05 level.

Table 5 shows that the learners use map concepts is quite differently from the learners of other groups. This difference is significant ($p=.020<.05$) between the map concepts and wordlists and control groups; however, the significant difference is not seen between the wordlists and control groups. In other words, map concepts group is very different from the group that did not use map concept techniques. The study found that the group using wordlists had significant

improvement in writing posttest to the groups not using them. Four writing components of the checklist used to score the essays are layout/organization, development/support, style, and grammar/mechanics. Figure 1 shows the results of comparison of these categories in the control and experimental group.

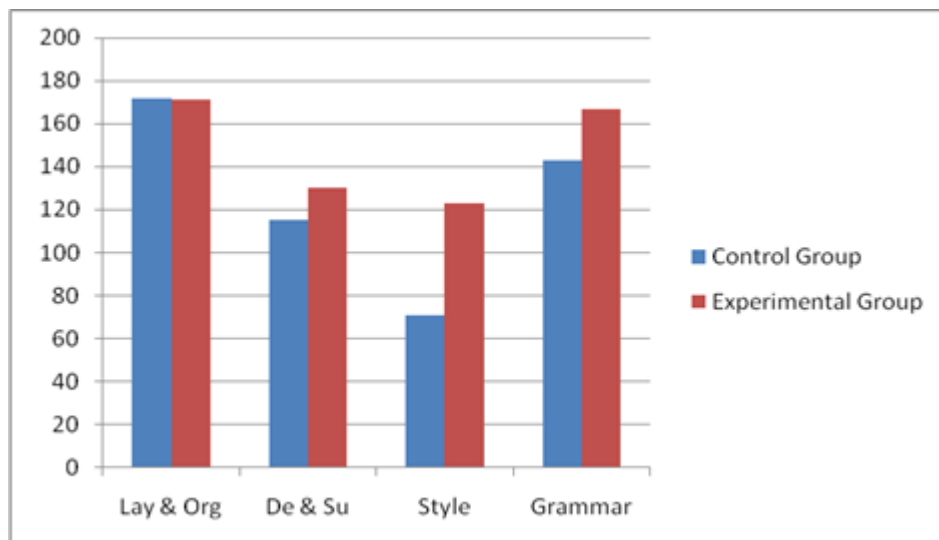


Figure 1. Writing Components

Note: Lay & Org= Lay out & Organization; De & Su= Development & Support

Figure 1 displays experimental groups did better than the control group in all areas except for the first one (lay out and organization) since the two components are not almost very different from each other. Generally speaking, the experimental groups who followed the two techniques of map concepts and wordlists did better at accurate writing compared to the control group.

Discussion

The research question of the study explores map concepts and wordlists techniques comparison affecting Iranian EFL learners' writing skill. Findings of the study showed that both wordlists and map concepts vocabulary learning techniques affect Iranian EFL learners' writing skill; however, the map concepts technique is significantly different from the other experimental group. Findings indicated that there was not a significant difference between the wordlists and control groups in the posttest but the effectiveness of the wordlists is greater than the control group who worked on textbook-based exercises of composing essays. The students who were taught with map concepts did better and got higher scores than the groups who learned with wordlists or did not use those techniques. In addition, the Post-hoc Scheffe test confirmed that the map concepts instruction had the highest improvement in their writing ability on the posttest. The reasons behind this result could be discussed in terms of the effectiveness of map concepts vocabulary learning technique on learners' use of productive vocabulary in writing. It means they think of the words in their minds and find the schemata of concepts related to the meanings of words and then they organize them in their mind to make concepts.

Although the wordlists instruction group slightly improved but the Post-hoc Scheffe test shows that the wordlists instruction group did not show a significant difference with the control group. This may be the lack of productive thinking that exists within the map concepts group. The wordlists group just list the related words and organize them in their writing. They do not make concept of these related words in their minds before writing. In other words, learners in the wordlist group follow cognitive activities but map concepts go beyond it and should arrive at metacognitive functions of mind which is consistent with Wenden (1987). Thus, they need not only the meaning of words but they also need to imagine the related mechanisms among the words to shape a unified piece of writing.

Findings of the study show that teaching words is not enough to arrive at appropriate instruction of writing. Learners need to acquire how to relate the words in the context of the real world. The learners may learn too much if they think of the words and their function in the context and then report them in their essays to yield better gains. This give them effective results in writing essays than teaching words in an isolated definitions, synonyms, or antonyms approach. Nash and Snowling (2006) also notice the same results as they compared the two approaches and found that the context group could express significantly more meanings, specifically, meanings of nouns rather than verbs. The results of this study are compatible and in line with previous studies conducted by (e.g., Schmitt, 2008; Walters, 2004, 2006) who found that using context to figure out the meaning is an essential contributor to vocabulary growth. Given that, the map concepts group acquired new vocabulary.

Extending the results of map concepts instruction from vocabulary acquisition to affecting the writing of the learners is also in line with several studies that prove the connection between vocabulary and writing. These results are matched with (Astika, 1993) who thinks having a contextualized vocabulary is the most important thing for getting high scores in writing. Roessingh and Espinosa (2008) knowing more words and how to write well in a specific concept-driven manner is important for deciding how good someone's writing is organized.

Results also showed a significant difference between learners' writing proficiency in wordlists and map concepts learning strategies. In other words, the group who used map concepts did better than the group who just used lists of words. Results confirm that using context and context clues may be better than concept maps for learning and using vocabulary in the writing processes. Another reason could be that the participants knew more about context clues than the other groups who just arrange the words in lists or did the textbook exercises. Thus, concept maps explained the place and position of the words in the understandable and imaginable schema. Using concept maps is easier and more natural than using words in isolation since learners can be confusing if they are beginners and require more instruction. This means that using map concepts can help learners learn and remember new words in the real context.

The results of the delayed post-test also were compatible with a previous study done by Nash and Snowling (2006) who compared two approaches of teaching vocabulary and found

the context group could express significantly more meanings, specifically, meanings of nouns rather than verbs after an interval of three months. In their view, this difference emerged due to a decrease in expressive knowledge in the definitions group and a slight increase in the context group and arguably, implies that semantic representations created via the context method were more durable.

Conclusion

Findings of the study revealed context clues are effective in using writing strategies. Therefore, conclusions of the study may be met as both map concepts and wordlists are effective in writing skills. But the former strategy is more usable than the latter one in writing essays. The teachers should focus on the role of vocabulary gaining in instruction that contributes to develop learners' vocabulary acquisition. This can boost the learners' brainstorming and make them aware of related words in a concept. Using context clues to guess the meaning of an unknown word may have more significant on learners' vocabulary acquisition than guessing the meaning from concept maps; (4) Encountering the word in the context for the first time increases the chance of recalling the word in the future; (5) Exposure to the context of language use may promote learners' acquisition; (6) Learning the word within a context may affect the ability to use the learned words in writing; and (7) Concept maps may not be useful techniques to teach new vocabulary. Employing context clue strategies affect vocabulary acquisition, recall, and use in writing.

The application of map concepts vocabulary learning technique in teaching writing resulted in successful use of vocabulary in related concepts the have been experience by the learners. In this case, learners can develop their vocabulary and promote their writing skill within the context that is known by them. Learners can benefit from using this strategy in several ways including enjoyment the writing tasks in which they are encountering new vocabulary and having fun from learning a numerous number of words in contexts. Map concepts can promote not only vocabulary acquisition but also writing skill. Finally, they can gain more self-confidence after having successful schematic knowledge of related words in a piece of text. As a result, it is suggested that course designers consider and plan some map concepts techniques for English writing courses. In a nutshell, map concepts techniques facilitate learning writing essays since it harnesses both learners' cognitive and metacognitive capabilities in putting the words together and make sentences and paragraphs. Future research may focus on other variables in learning writing skills including age and gender as physiological factors and affective variables like anxiety, motivation, or attitude.

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Appendix: A Peer Review Form for Evaluating Writing

Source: Hee-Jung Jung (2011), The Internet TESL Journal, hjung@wsu.edu

Students can use this as a set of guidelines of what should be considered when evaluating the quality of writing. The process of evaluating other students not only helps the one being evaluated, but also helps the one doing the evaluating. Students should write comments to justify their evaluations.

Criteria	Excellent	Good	Poor	Comments
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Layout/Organization				
Paper structure (organization into sections, subsections, appendix)				
Clearly stated purpose and objective(s)				
Transitions used				
Introduction & conclusion focus clearly on the main point				
Development & Support				
Major ideas/topics received enough attention and explanation				
Supporting material persuasive				
Adequate references and resource material				
Style				
Topic and level of formality appropriate for audience				
Sentences and words varied				
Grammar and Mechanics				
Grammar				
Punctuation				
Spelling				
Recommended Changes				
Please recommend three specific changes in the writing.				
1.				
2.				
3.				

The Internet TESL Journal, Vol. VII, No. 5, May 2001
<http://iteslj.org/>

<http://iteslj.org/Handouts/Jung-WritingEvaluation.html>