The Effect of Teaching English Lexical Clusters on Iranian EFL Intermediate Learners' Speaking Accuracy

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Abstract

This study intended to inspect the possible effects of teaching English lexical clusters on speaking accuracy of Iranian EFL intermediate learners. Also it examined the influence of gender on the effect of teaching English lexical clusters on speaking accuracy of the same learners. 41 male and female EFL intermediate learners, studying English at intermediate level at Zabankade Institute in Tehran, were selected based on their performance on OPT test to 60 EFL learners. Then they were randomly assigned into two groups, as the experimental (n=21) and the control (n=20) groups in two classes. This study had a quasi-experimental design in which there were both a control and an experimental group, and the pretest and posttest were administered to collect data. First, a PET speaking test was administered to the participants of two groups to examine the initial knowledge of speaking grammatically of them. The experimental group of the study was treated with the teaching of English lexical clusters and the control group through a traditional method of teaching without lexical clustering technique. At the end of the experimental period, a posttest of PET speaking test identical to the pretest of PET speaking test was administered to the both groups of the study. In order to analyze the scores obtained from the pretest and posttest and answer the research questions of the study, a mixed between-within subjects ANOVA was applied. Time was the within-subject factor, and group and gender were considered as the between-subject factors. Tests of between-subjects effects (Table 7) indicated that there was a statistically significant effect for the Group ($F(1,37)=6.04$, $P<.05$, Eta square=.14) in speaking accuracy. Consequently, the first null hypothesis is rejected, and therefore, it can be claimed that teaching English clusters significantly improves Iranian Intermediate EFL learners speaking accuracy. Tests of between-subjects effects failed to find any statistically significant effect for Gender ($F(1,37)=.99$, $P>.5$, Eta square=.02) in speaking accuracy. So, the second null hypothesis was confirmed and it was revealed that gender does not affect the vocabulary performance of the same learners. This may have significant implications for language instructors, course book writers and learners to make more advancement in vocabulary learning and speaking accurately through employing vocabulary or lexical clustering as a technique.

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Introduction

One of the issues that students, teachers, material writers, and researchers have all agreement upon is that an important part of mastering a Second Language is Learning Vocabulary (Groot, 2006). Although teaching vocabulary has always been a keystone in English Language Teaching (ELT), finding an effective method for vocabulary learning has always preoccupied curriculum developers in general and language teachers in particular (Bogaards & Lafer, 2004 ; Read, 2000; Richards &Renandya, 2002). On the other side of this conflict, there are authors like Seal (1991), Grandy (1992), Haycraft (1993), Stoller and Grabe (1995), Wharton and Race (1999), and Hashemi and Gowdasiaei (2005), who speak in favor of presenting new words in semantics sets on the basis that it is an effective way of presenting new words, and possibly reflecting the natural organization of the mental Lexical (Aitchison,1994, 1996).

The most central supporting argument, however, is derived from the linguistic theory of Semantic Fields which is based on the assumption that rather than being organized by interrelationships and networks between words, i.e., the mind classifies vocabulary by making connections in meaning; these connections in meaning are Semantics Fields (Channell, 1981). On the other hand, there are those researchers (Higa, 1963; Laufer, 1989; Tinkham, 1993, 1997; Waring, 1997; Nation, 2000; Finkbeiner and Nicol, 2003), who maintain that if similar words that share numerous common elements and a super-ordinate concept are introduced at the same time, these words will interfere with each other and have a negative impact on their retention due to cross-association and possible overloading in the short term memory. Research delineated that learning new words in semantic sets required more learning trials to be learned completely (Finkbeiner and Nicol, 2003; Tinkham, 1993, 1997; Waring, 1997). To support the idea, based on the psychological Theory of Interference and the Distinctive Hypothesis, the researchers hold that contrary to popular beliefs the semantic cluster treatment might be harmful for L2 vocabulary learning and it makes learning more difficult and interferes with the learning of similar words.

Social interactionists see language as rulegoverned cultural activity learned in interaction with others. According to Vygotsky (1978, as cited in Shannon, 2005), socialinteraction plays an important role in the Learning process. Ellis (2004) stated that "interactionists view language learning as an outcome of participating in discourse, in particular face to face interaction" (p.78). According to chaney (1998), speaking is the process of building and sharing meaning through the use of Verbal and non Verbal symbols, in a variety of contexts. Speaking is important in language learning and teaching.

Review of the Related Literature

Lexical clusters

According to Longman Dictionary of Language Teaching and Applied Linguistics (Richards& Schmidt, 2002), lexical item refers to the smallest unit in the meaning system of a language that can be distinguished from other similar units. Lexical item is another term for lexeme. A lexeme is an abstract unit. It can occur in many different forms in actual spoken or written sentences, and is regarded as the same lexeme even when inflected. For example, in English, all inflected forms such as *give, gives, given, giving, gave* would belong to the one lexeme give. Similarly, such expressions as *bury the hatchet, hammar and tongs, give up,* and *white paper* (in the sense of a government document) would each be considered a single lexeme. The four main lexical categories are *n (noun)*, *v (*verb*)*, **a** (adjective*)* and *p (*preposition*)*. Lexical clusters refers to the groups of lexical items which are closed together, and they have different forms such as: N-N, A-N, V-N, N-P, A-P, Adv.-V.

Supporting theoretical and empirical background for semantic clustering: semantic fields

Crow and Quigley (1985) investigated effectiveness of semantic field approach to passive vocabulary acquisition comparing it to the traditional method of vocabulary instruction. In their study, four classes of students (n=42) enrolled in level 5 (of 6 levels) at the North Texas State University intensive English Language institute comprised two groups taking part in the experiment. Group 1 served as the control group and group 2 as experimental for the first two units (units 1 and 2) of the experiment. This arrangement was reversed in the second half (units 3 and 4) of the study. A pretest on the vocabulary covered in units 1 and 2 did not reveal statistically significant differences in the lexical knowledge between the two groups. The two post tests given immediately after completion of the respective halves of the experimental treatment (units1, 2 and unit 3, 4) were designed to assess short-term retention of the target vocabulary.

The first follow-up test administrated four weeks after the experiment and the second follow-up test given only to those students, who after completing intensive English study were accepted into university and studied there for two months as the full-time students (n=10),were designed to examine long-term retention of the presented material. The treatment procedures in the control group did not allow covering the same number of words as in the experimental group in the same amount of time. Therefore, only half of the words in each unit were selected for presentation to the control group and were subsequently tested on the immediate posttests. The results of the immediate posttests revealed that the control group which received the traditional vocabulary treatment scored significantly higher than the experimental group. The outcomes of the first follow-up test showed no significant difference in recall between the words learnt experimentally and the words learnt traditionally. The second follow-up test utilized the same tasks as in treatment procedures received by the experimental semantic field condition and compared performance of the subjects from group 2 on the materials they were exposed to (in units 1 and 2) and the materials which were not presented to them (in units 3 and 4). As might be naturally

expected, subjects' performance on the experimentally presented vocabulary was significantly better than their performance on vocabulary on which they did not receive any treatment. On the basis of these experimental data researchers concluded that a semantic field approach is a more effective and efficient builder of L2 passive vocabulary.

Opposing theoretical and empirical background for semantic clustering

The theory of interference works both ways: 1. Retroactive interference/ inhibition and 2. Proactive interference/ inhibition. Retroactive interference refers to the type of interference when newly-learned information inhibits previously-learned information, while the second one refers to the type of interference that occurs when previously-learned information disrupts the learning or recall of subsequent material (Gass & Selinker, 2008).

The finding of a study by Schneider, Healy, and Bourne(1998) that used natural L2 words rather than artificial ones, initially appeared to suggest that learning related words together (for example, parts of the body) was easier than learning unrelated words. However, when a test of long term (LT) retention was administered, the researchers found that the participants in the mixed-order acquisition condition (presented with unrelated vocabulary) were faster and made fewer errors than those in the grouped-order acquisition condition (presented with related vocabulary).

Finkbeiner and Nicol (2003) carried out their experiment by utilizing four categorise of eight pseudo word-picture pairs, which were presented in either semantically related or unrelated sets. Both groups were presented the words orally and then they saw the picture depicting the meaning of the word, after which they repeated the new label for the word twice. Once the participants had been trained in this way, they completed oral L1-L2 and L2-L1 translation tasks, for which translation latencies were measured. The results showed that the semantically related group was slower than the unrelated group, which seems to confirm the inhibitory effect that presenting vocabulary in semantically related sets can have on vocabulary learning.

Papathanasiou (2009) compared learning sets of the semantically related and semantically unrelated vocabulary by young intermediate learners of English (n=31), and the novice adult English learners (n=32). Half of the subjects on each FL proficiency level were presented with L2 vocabulary in the semantic sets, and the other half learnt semantically unrelated words. The results of the immediate and delayed post tests showed that the semantic set treatment caused additional difficulties for the adult beginners but had no effect on the young English learners who had attained intermediate foreign language proficiency. Interpreting the experimental findings, the researcher concluded that presenting words in the semantic sets impedes L2 vocabulary learning at the beginner's level but has smaller impact on more advanced foreign language learners.

In Iranian context, Marashi and Azarmi (2012) conducted a study among 120 female EFL learners who were selected among a total number of 180 based on their performance on a piloted Cambridge Key English Test (KET) and randomly put into four experimental groups. The same content was taught to all four groups throughtout the fifteen-session treatment; the only difference was over the mechanism of teaching vocabulary to the four groups. In the first group,

vocabulary was taught in semantically related sets and in an incidental learning mode. The second group received them in the same sets but in an intentional learning mode. The third experimental group experienced semantically unrelated sets and in an intentional learning mode, while the fourth group was taught the vocabulary in semantically unrelated sets but in an incidental learning mode. A vocabulary achievement test within the content area was given to the students in all groups at the end of the instruction and the mean scores of all groups on this post test were compared through a two-way ANOVA. The results revealed that presenting words in semantically unrelated sets and in an intentional learning mode was more effective on students' vocabulary achievement compared to the other modes.

Speaking accuracy

According to Longman Dictionary of Language Teaching and Applied Linguistics (Richards & Schmidt., 2002) Speaking accuracy refers to the ability to produce grammatically correct sentences but may not include the ability to speak or write fluently.

Communicative language teaching (CLT)

Communicative Language Teaching (CLT) was introduced in the 1970's as a reaction to the old traditional grammar-translation method (Richards, 2006). People realized that for a language learner to be successful they needed to be able to speak and communicate. Thus focus was moving away from writing to speaking. CLT is based on the theory of communicative approaches which Harmer (2001) sums up as a 'set of beliefs' that re-evaluated what to teach and how to teach it. CLT has moved more and more towards the importance of getting the meaning across and the ability to communicate. CLT also includes 'paralinguistic' features, both vocal and body movement. Richards (2006) defines CLT as "a set of principles about the goals of language teaching, how learners can learn a language, the kind of class room activities that best facilitate learning, and the roles of teachers and learners in the class room" (p.2). The goal within CLT is to gain the ability to use the language in an appropriate way according to the situation, and to be able to use various 'communication strategies' in a conversation. Although the main focus is on speaking it is not promoted at the expense of the other skills. Communication is also encouraged within writing.

Language learning has also shifted from the control of the teacher to more of a focus on the student. Interaction and co-operation between language learners are key points as well as responding to feedback and utilizing input. Getting learners to take risks and learn through error are also important strategies for working on improving language skills. The methodology must also change to fit in with these goals and processes and is moving towards working in groups or pairs, using role play as well as working on different projects (Richards, 2006).

Meaning and significance of collocation

There is no general consensus among linguists on what collocation is, and different definitions have been proposed for the notion of collocation. Nonetheless, most of them are paraphrases of Firth's (1957) definition that collocations are "words in habitual company" (p.183). Cruse (1986), for example defines collocations as "sequences of lexical items which habitually co-

occur, but which nonetheless fully transparent in the sense that each lexical constituent is also a semantic constituent" (p.40).

Richards and Schmidt (2002) define collocation as "the way in which words are used together regularly" (p.87). Based on this definition, collocation refers to the restrictions on how words can be used together; for example, which verbs and nouns go together, or which adjectives are used with particular nouns. For example, in English the verb *do* collocates with *damage, duty*, and *wrong*, but not with *trouble, noise*, and *excuse*. Similarly, *high* collocates with *probability* but not with *chance*. We say *high probability* but *a good chance.*

Lewis (2000) defines collocation as "the way in which words co-occur in natural text in statistically significant ways" (p.132). For Nattinger and DeCarrico (1992), collocations are defined as "strings of specific lexical items that co-occur with a mutual expectancy greater than chance, such as *rancid butter* and *curry favour*" (p.36). For James (1998), collocations are "the other words any particular word normally keeps company with" (p.152).

McCarthy (1990) believes that collocation is "an important organizing principle in the vocabulary of any language" (p.12). For him, collocational knowledge includes part of native speakers' competence, and can pose problems for EFL learners in cases where collocability is language-specific and is not solely determined by universal semantic restrictions. Pointing to multi-word expressions as an essential component of fluent linguistic production and also a key factor in successful language learning, Hyland (2008) emphasizes the importance of collocations in this way:

> An important component of fluent linguistic production is control of the multi-word expressions referred to as clusters, chuncks or bundles. These are extended collocations which appear more frequently than expected by chance, helping to shape meanings in specific contexts and contributing to our sense of coherence in a text. (p.4)

According to Hill (2000), besides being familiar with the concept of communicative competence, the notion of collocational competence is necessary to be added to our thinking. As he puts it, "within the mental lexicon, collocation is the most powerful force in the creation and comprehension of all naturally-occurring text" (p.49), and it includes one of the most significant areas of idiomatic language. Viewed in this way, collocation is supposed to occupy a central place in the applied linguistics research. However, it was only recently with the advent of corpus linguistics that research into vocabulary in general and collocation in particular has blossomed (Harmer, 2001; Schmitt, 2002; Boers, Eyckmans, Kappel, Stengers, & Demecheleer, 2006).

The Study

Findings of this study do not support presenting semantically related vocabulary together. Although further research to validate these results is still necessary, it suggested that rather than presenting semantically related new vocabulary together, it would be better if words in the same semantic group be presented separately. The findings of this research can also help syllabus designers and course book writers to design more effective textbooks for elementary and

advanced learners. Also, it is recommended to design a teacher's guide with the focus on how to present and instruct vocabularies for the content being used in different systems clearly because lack of a guide can lead to controversial issues faced by different teachers.

Findings of this study also indicate that semantic organization in our mental lexicons does not justify integration of such relationships in teaching vocabulary. New strategies may need to be developed to present and recycle new vocabulary items so that semantic relations cause minimal confusion (Nation, 2001). Learners themselves may often want to learn vocabulary in semantic sets, as Nation (2000) suggests, but they should be encouraged to avoid this practice. According to Nation, semantic sets should be associated only after the items have been learned in isolation and without paying attention to the semantic relations between them. The aim of the present study is to examine if the teaching English lexical clusters affects speaking accuracy of intermediate EFL learners. It also investigates that if gender affects the vocabulary performance of the same learners or not.

Statement of the problem

Vocabulary is an important element in learning language that often seems to be a source of problem for many language learners. Fu (2009) believed that words are the only instrument in expressing something; therefore, difficulty in vocabulary learning and recall leads to major problem in language use. Learning vocabulary is of great significance in learning a language If foreign language learners have sufficient vocabulary domain, they will have considerable proficiency to understand what they heard and read and thus they will be able to produce better language when they are speaking or writing.

The most important factor in a successful vocabulary building program is the desire to learn and thus helping EFL learners to have strong desire to learn vocabulary items is of great importance for their success in language learning. Finding an effective method for vocabulary instruction has considerable significance and value and lexical knowledge is one of the essential factors in comprehending a text or oral speech. According to Bygate (1987), the problem in teaching a foreign language or a second language is to prepare the students to use the language. In fact, it is a demanding task for language teachers to provide sufficient inputs for students to be competent speakers of English. In addition, language teachers at schools do not give full attention on speaking activities due to some constraints. Moreover, some ESL teachers prefer individual and pair work in class due to the fixed seating arrangement. Thus, emphasis should be given to address this problem as speaking is an important element in mastering English language. In order to improve English speaking skill, students should speak, talk, converse, gab. To fulfill the purpose of this study and to examine the effect of gender on the vocabulary performance of Iranian EFL intermediate learners who were taught through lexical clustering technique, the following questions will be addressed:

Research questions

Q1: Does teaching English lexical clusters significantly affect Iranian EFL intermediate learners' speaking accuracy?

Q2: Does gender affect the vocabulary performance of Iranian EFL intermediate learners who were taught through lexical clustering technique?

Method

Participants

The participants in this study included 41 male and female EFL intermediate learners within the age range of 18-27, learning English at intermediate level at Zabankade Institute in Iran, Tehran. They were selected based on their performance on Oxford Placement Test to 60 EFL learners. 41 students whose scores were between one standard deviation of (8.08) above and below the mean (38.45) (scores between 30 and 46) were selected as the main participants of the study. Sample selection was based on OPT test direction (Oxford Placement Test, 2001, version 1.1) which stated that the students who had +31 correct answers in grammar and vocabulary part and +8 correct answers in reading part were considered to be at intermediate level of language proficiency. Then they were randomly divided into the experimental (n=21) and the control (n=20) groups in two classes. The two classes were taught 12 sessions, two times at a week during one month and a half. The study had a quasi-experimental design in which there were both a control group and an experimental group and the pretest and posttest were administered to collect data. Also, the independent variables of the study were the presentation of new words in lexical clusters and the second independent variable is the gender of the intermediate EFL learners in this study. The dependent variable was the speaking accuracy of the same learners.

Instruments

The materials were divided into four parts: 1) materials for proficiency test: an OPT test was administered between 60 learners. After that 41 learners whose scores were between one standard deviation of (8.08) above and below the mean (38.45) (scores between 30 and 46) were selected as the main participants of the study, and they were randomly divided into the experimental (n=21) and control (n=20) groups. 2) materials for pretest: it included one PET speaking test which consisted of 10 speaking questions that learners could answer orally. The speaking questions were used from Quintana (2003). The learner's answers were recorded and analysed. Their scores were based on Accuracy Measure (Percentage of error free clauses). Accuracy was measured by identifying the number of error-free clauses, which was then divided by the total number of clauses produced, and the resulting figure was multiplied by 100 (Khan, 2010; Skehan & Foster, 1999). An error-free clause was one in which there was no error in syntax, morphology or word order. Errors in lexis were counted only if the word used was nonexistent in English, or indisputably inappropriate (Skehan & Foster, 1997). High means indicate fewer errors and as a result better performance (Bamanger, 2014).

Acurracy Measure (Percentage of error free clauses)

$$\frac{\text{Number of error-free clauses}}{\text{Total number of clauses}} \times 100$$

3) materials for treatment: they were selected from the book titled *"Key words for Fluency"* by George Woolard (2004), that was designed for upper-intermediate level of learners. This book is

about learning and practising the most useful words of English with upper-intermediate collocation practice. 4) materials for posttest: it contained one PET speaking test identical to the PET speaking pretest.

The posttest consisted of 10 oral test questions. The posttest of speaking were used from Quintana (2003). For both the experimental and control group, the same PET speaking pretest and same PET speaking posttest was prepared by the same teacher who had an M. A. in TEFL. After the tests were administered the data were collected. Both groups received instruction in twelve sessions. In experimental group teacher use of some strategies of teaching English lexical clusters while the control group was taught by traditional method without employing lexical clustering technique.

Design

The design of the study includes at least four stages: 1) subject selection via administering an Oxford Placement Test (OPT), 2) exposing the participants to the pretest of PET speaking test, 3) treating the experimental group of the study with the teaching of English lexical clusters and the control group through a traditional method of teaching without lexical clustering technique. 4) administering the posttest of PET speaking test to both groups of the study.

Procedure

With regard to the nature of the study and the research questions, in this study first, to select the main sample, the Standardized Oxford Placement Test (OPT) was administered to 60 EFL students. The participants took the structure, vocabulary and reading comprehension sections of the test; the maximum score was 60 points. Based on OPT test direction 41 intermediate students whose score was 31+ in grammar and vocabulary and 8+ in reading section were selected as the main sample for the present study. In the next step, one PET speaking test which were used from Quintana (2003) was given to the learners as pretest of speaking. The learners could answer questions orally, and their answers were recorded and analysed. Their scores were based on Accuracy Measure (Percentage of error free clauses). Accuracy was measured by identifying the number of error-free clauses, which was then divided by the total number of clauses produced, and the resulting figure was multiplied by 100 (Khan, 2010; Skehan & Foster, 1999). An error-free clause was one in which there was no error in syntax, morphology or word order. Errors in lexis were counted only if the word used was nonexistent in English, or indisputably inappropriate (Skehan & Foster, 1997). High means indicate fewer errors and as a result better performance (Bamanger, 2014).

Accuracy Measure (Percentage of error free clauses) =

$$\frac{\text{Number of error-free clauses}}{\text{Total number of clauses}} \times 100$$

In the treatment phase of the study, the control group practiced the same target vocabulary of the experimental group through a traditional method of teaching, without employing any specific vocabulary strategy in which the words were introduced out of the context, and also without any thematic or semantic relationship to each other. For experimental group, new upper-intermediate words in appropiriate contexts were adopted from a book titled "*Key words for Fluency*" by

George Woolard (2004). This book is about learning and practising the most useful words of English with collocation practice for upper-intermediate level learners. Twelve passages were selected and some modifications were made to the original passages of the book in terms of the length of passage but not in sentence structures or content. In each session, one passage was given to the students in experimental group which is lexical clustering experimental group. In lexical clustering experimental group, the lexical clusters were taught through lexical clustering technique. In Each session the participants were presented 15 vocabularies.

At the end of 12 sessions of the experimental period, the posttest which consisted of one PET speaking test and was identical to the PET speaking pretest was administerd to the learners in both experimental and control group by the same teacher who had an M. A. in TEFL and then the data were collected. After the PET posttest of speaking from both groups, we examined the results of the PET speaking pretest and posttest to see if the lexical clustering technique had a significant effect on speaking accuracy of the learners in both groups or not. Also we examined that if gender affect the vocabulary performance of the same learners who were taught through lexical clustering technique in both groups.

Data analysis
In order to analyze the collected data, the participants' performances on pre and post-test were scored and subjected to the statistical analyses using SPSS (version 18.0). In order to answer the research questions of this study, a mixed between- within subjects ANOVA was applied. Time was the within- subject factor, and group and gender were considered as the between- subject factors.

Results

4.1. OPT Test Results
A group of 60 students took OPT to be selected as homogeneity intermediate participants. The descriptive statistics, as shown in Table 1, indicates that the mean, median and mode of the OPT scores are 38.45, 38, and 25 respectively. These central parameters are not very far from each other showing that the scores are distributed normally around the mean.

Table 1: Descriptive Statistics for OPT Scores

N	Mean	Median	Mode	SD	Skewness	Kurtosis
60	38.45	38.00	25	8.08	.022	-.815

Based on the results of OPT (Table 1), those 41students whose scored one standard deviation of 8.08 plus and minus the mean of 38.45 (scores between 30 and 46) were chosen as homogeneous intermediate participants for the current study. Furthermore the table reflects that the normality of the scores is met as the ratios of skewness and kurtosis over their respective standard errors do not exceed the ranges of +/- 1.96.

4.2. Analysis of the Research Questions 1 and 2

The first research question of this study concerned with examining whether teaching English lexical clusters affects Iranian EFL intermediate learners' speaking accuracy. And the second research question investigated if gender affects the vocabulary performance of Iranian EFL intermediate learners who were taught through lexical clustering technique. In order to answer the research questions of this study, a mixed between-within subjects ANOVA was applied. Time was the within-subject factor, and group and gender were considered as the between-subject factors. Table 2 represents the results of the descriptive statistics. According to Table 2, the mean and standard deviation of accuracy for the experimental ($\bar{x}$ = 48.50, SD = 7.28) and control ($\bar{x}$ = 47.085, SD = 8.00) groups are not far from each other on pre-test of speaking. On the contrary, the students in the experimental group ($\bar{x}$ = 57.20, SD = 9.46) have acted considerably better than those in the control group ($\bar{x}$ = 49.00, SD = 7.57) on post-test of speaking accuracy. Also based on the results represented in Table 2, the mean of speaking accuracy for the male and female students are not noticeably different though it is higher in amount for the females on both pre-test and post-test.

Table 2: Descriptive Statistics for Speaking Accuracy Scores for different Groups & Genders (Pre-test & Post-test)

	Group	Gender	Mean	Std. Deviation	N
Pre-test	Experimental	Male	47.30	7.409	10
		Female	49.70	7.349	10
		Total	48.50	7.287	20
	Control	Male	46.20	7.743	10
		Female	47.82	8.542	11
		Total	47.05	8.009	21
	Total	Male	46.75	7.398	20
		Female	48.71	7.856	21
		Total	47.76	7.605	41
Post-test	Experimental	Male	56.30	9.476	10
		Female	58.10	9.871	10
		Total	57.20	9.462	20
	Control	Male	47.90	8.647	10
		Female	50.00	6.708	11
		Total	49.00	7.570	21
	Total	Male	52.10	9.824	20
		Female	53.86	9.139	21

	Group	Gender	Mean	Std. Deviation	N
Pre-test	Experimental	Male	47.30	7.409	10
		Female	49.70	7.349	10
		Total	48.50	7.287	20
	Control	Male	46.20	7.743	10
		Female	47.82	8.542	11
		Total	47.05	8.009	21
	Total	Male	46.75	7.398	20
		Female	48.71	7.856	21
		Total	47.76	7.605	41
Post-test	Experimental	Male	56.30	9.476	10
		Female	58.10	9.871	10
		Total	57.20	9.462	20
	Control	Male	47.90	8.647	10
		Female	50.00	6.708	11
		Total	49.00	7.570	21
	Total	Male	52.10	9.824	20
		Female	53.86	9.139	21
		Total	53.00	9.402	41

The homogeneity of covariance assumption (Table 3) for performing ANOVA was met (Box's $M = 4.19$, $p > .05$).

Table 3: Box's Test of Equality of Covariance Matrices

Box's M	F	df1	df2	Sig.
4.198	.421	9	15221.170	.925

As evident from Table 4, the results of Levene's test revealed that our data enjoyed the assumption of homogeneity of variance as well because the significance value was greater than .05 for both pre-test and post-test.

Table 4: Levene's Test of Equality of Error Variances (Pre-test & Post-test)

Structure type	F	df1	df2	Sig.
Pre-test	.181	3	37	.909
Post-test	.576	3	37	.634

A mixed between-within subjects ANOVA that was conducted to see if teaching English lexical clusters and gender affect Iranian EFL intermediate learners' speaking accuracy are provided in Table 5. Based on the table 5, Greenhouse-Geisser correction showed that the mean score differences for pre-test and post-test of speaking accuracy were statistically significant $(F(1, 37) = 10.28, P < .01)$. Multivariate tests (Table 5) confirm the results.

Table 5: Test of Within Subjects Effects for Pre-test & Posttest of Speaking Accuracy

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Time	Sphericity Assumed	579.311	1	579.311	10.285	.003	.218
	Greenhouse-Geisser	579.311	1.000	579.311	10.285	.003	.218
Time * Group	Sphericity Assumed	233.739	1	233.739	4.150	.049	.101
	Greenhouse-Geisser	233.739	1.000	233.739	4.150	.049	.101
Time * Gender	Sphericity Assumed	.018	1	.018	.000	.986	.000
	Greenhouse-Geisser	.018	1.000	.018	.000	.986	.000
Time * Group* Gender *	Sphericity Assumed	1.497	1	1.497	.027	.871	.001
	Greenhouse-Geisser	1.497	1.000	1.497	.027	.871	.001
Error(factor1)	Sphericity Assumed	2084.068	37	56.326			
	Greenhouse-Geisser	2084.068	37.000	56.326			

As it can be seen in Table 6 below (multivariate tests), the partial eta square index is .21, which means that 21 percent of the variance in the speaking accuracy scores is due to time; this is a relatively moderate effect size (.218> .138). The gained results for Wilks' Lambda (F(1, 37) = 10.28, P< .01) indicated that time (i.e., pre-test & post-test) influenced speaking accuracy significantly.

Also multivariate tests (Table 6) indicated that the interaction effect of Time and Group (experimental & control) was significant (*F*(1, 37) = 4.15, P< .05). However, multivariate tests (Table 6) revealed that the interaction effect of Time and Gender was not significant (F(1, 37) = .000, P> .05), and also the interaction effect of Time, Group and Gender was not significant, too (F(1, 37) = .027, P> .05).

Table 6: ANOVA Multivariate Tests for Pre-test & Post-test of Speaking Accuracy

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Time	Pillai's Trace	.218	10.285ª	1.000	37.000	.003	.218

	Wilks' Lambda	.782	10.285ᵃ	1.000	37.000	.003	.218
Time * Group	Pillai's Trace	.101	4.150ᵃ	1.000	37.000	.047	.101
	Wilks' Lambda	.899	4.150ᵃ	1.000	37.000	.047	.101
Time * Gender	Pillai's Trace	.000	.000ᵃ	1.000	37.000	.986	.000
	Wilks' Lambda	1.000	.000ᵃ	1.000	37.000	.986	.000
Time * Group * Gender	Pillai's Trace	.001	.027ᵃ	1.000	37.000	.871	.001
	Wilks' Lambda	.999	.027ᵃ	1.000	37.000	.871	.001

a. Exact statistic

b. Design: Intercept + Group + Gender + Group * Gender

 Within Subjects Design: Time

Table 7 provides us with the results of tests of between-subjects effects that were performed to investigate the effects of group and gender on speaking accuracy.

Table 7: *Tests of Between-Subjects Effects (Group & Gender)*

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Intercept	208060.595	1	208060.595	2589.152	.000	.986
Group	485.460	1	485.460	6.041	.017	.140
Gender	80.195	1	80.195	.998	.324	.026
Group * Gender	.297	1	.297	.004	.952	.000
Error	2973.268	37	80.359			

Tests of between-subjects effects (Table 7 above) indicated that there was a statistically significant effect for Group (F(1, 37) = 6.04, *p*< .05, Eta square = .14) in speaking accuracy. Consequently, the first null hypothesis that states "Teaching English lexical clusters does not significantly affect Iranian EFL intermediate learners' speaking accuracy" is rejected, and therefore, it can be claimed that Teaching English lexical clusters improves Iranian EFL intermediate learners' speaking accuracy.

Tests of between-subjects effects (Table 7 above) failed to find any statistically significant effect for Gender (F(1, 37) = .99, *p*> .05, Eta square = .02) in speaking accuracy. Accordingly, the second null hypothesis that proposes "Gender does not affect the vocabulary performance of Iranian EFL intermediate learners who were taught through lexical clustering technique" is confirmed, and declared that gender does not significantly affect the vocabulary performance of Iranian EFL intermediate learners who were taught through lexical clustering technique.

A line chart was made to illustrate the results. As evident from Figure 1, the students in the experimental group have performed considerably superior to the control group on the post-test of speaking accuracy, while the means of speaking accuracy do not differ dramatically for male and female ones.
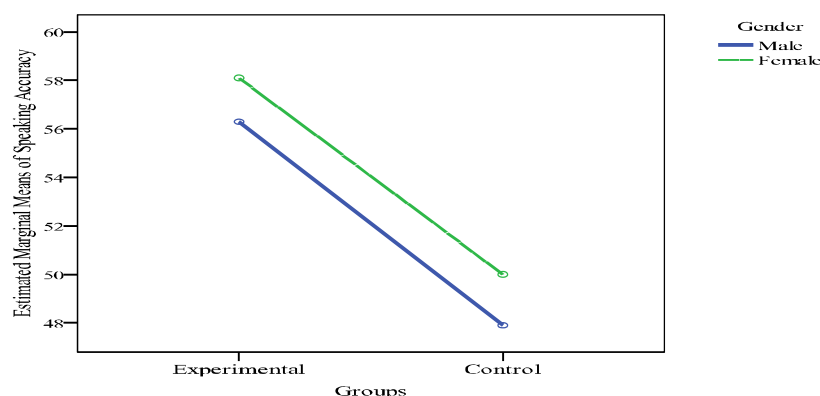
Figure 1. Means of speaking accuracy for different groups & genders (post-test)

Discussion

The results of the present study are in line with Interference Theory and Distinctiveness hypothesis as the confirming theoretical backgrounds reviewed in the review of the related literature. It can be evoked to argue that presenting L2 learners with vocabulary items grouped in semantic clusters actually impedes vocabulary learning rather than acting as a support to learning. It refers to the decrease in retention because of a learning activity that interpolates between original learning and later recall.

Besides the Interference Theory, the other evidence against providing words in semantic clusters is the Distinctiveness Hypothesis which suggests that variation within information facilitates learning. The claim is that people remember distinct items better than they remember those that are non-distinct. Research demonstrates that, as this hypothesis predicts, distinctiveness of information facilitates memory.

However, there is some empirical evidence against the presentation of semantically related vocabulary in sets. The findings of this study are in line with what Tinkham (1993) found in his study investigating the effect of presenting L2 students with new lexis grouped together in sets of semantically and syntactically similar words on learning second language vocabulary. The present study also confirms the replication of Tinkham's (1993) study by Waring (1997) in whose research Japanese students participated in activities in which they were presented with pairs of word.

Both the fluency based task and the accuracy based task contained many of the features that, according to Richards (2006), provide a good learning environment. Both tasks contained interaction through communication and encouraged the students to use their language skills. They accounted for individual differences and were done with the student in focus and the teacher in the background. While the accuracy based task was more focused on grammar and being correct than the fluency task, the students in the fluency group practiced their writing by summarizing the other group member's texts in a journal. Research that supports semantic

clustering (Channell, 1981; Jullian, 2000; Schneider, Healy & Bourne, 2002) consists mostly of case-studies, except for Schneider, Healy and Bourne (2002), whose finding for semantic clusters in L2-L1 word translations has yet to be corroborated. Tinkham's (1993, 1997) research strongly supports organizing words into nonrelated or thematically related groups, but the implications of his investigations along with those of Waring's (1997) and Finkbeiner and Nicol (2003) are limited since the words being tested were artificial. Furthermore, these authors did not test over the long term, which restricts the conclusions that can be drawn for L2 development. Papathanasiou (2009) presents a similar argument using English words as the L2 with adults. She found that adult beginning-level ESL students scored significantly higher in both the posttests and delayed posttests containing unrelated vocabulary. However, further research probing into the effect of semantic clustering is certainly warranted in order to address the paucity of experimental research in this strand of investigation.

Conclusion and Implications

In the present study, the results of the data analysis rejected the first null hypothesis of the study and revealed that the technique of lexical or vocabulary clustering affected the speaking accuracy of Iranian EFL intermediate participants of this study. It can be concluded that vocabulary or lexical clustering can have a facilitative role in the vocabulary achievement among the participants of the present study and also it can affect the speaking accuracy of them. It showed a significant gain in vocabulary-using the semantic and thematic clustering technique which is not a common method of vocabulary teaching especially in EFL contexts where often the teachers share a common language with learners. It should be first mentioned that there are some studies which deny the usefulness of this technique of word organization on the vocabulary learning like those conducted by Finkbeiner and Nicol (2003) who summarized that " overall … presenting semantically grouped L2 words to learners has a deleterious effect on learning" (p. 376). Erten and Tekin (2008) in a study showed that test completion time for the semantically-related sets was longer than in the semantically unrelated sets, and also the results of vocabulary learning showed that semantically related clustering sets were harder to learn than the set of unrelated vocabulary.

The findings of the present study, however, are compatible with the findings of some studies which had been reviewed in the review of literature in chapter two. Hashemi and Gowdasiaei (2005) showed that semantically-related presentation of vocabulary helps to facilitate learning rather than presenting unrelated sets of words. Gairns and Redman (1986) maintained that semantic clusters assist learners to apprehend the semantic divisions; to notice where definitions overlap and grasp the restriction of use of a concept. They also believe that semantic clusters form building blocks and can be expanded as students' progress. It also provides a clear context for practice.

Hipper-Page (2000) showed both word groupings were beneficial, suggesting teachers might consider using both semantic and thematic groupings to help L2 elementary students learn new

vocabulary words. This research can be expanded in its scope by investigating other factors which can play a role in the vocabulary achievement like proficiency levels, age factor, and different strategies of delivering in order to have a clear picture of how lexicons are processed by ESL/ EFL learners. Some studies like AL-Jabri (2005) showed that proficiency levels and age variations can lead to different results.

The implications of the present study are two fold. The first one involves material developers and course book writers while the second one involves classroom procedures. Principles set for producing course books need to be based upon research findings (Richards, 2006). The findings of this particular study do not support presenting semantically related vocabulary together. Although further research to validate these results is still necessary, it can be suggested that rather than presenting semantically related new vocabulary together, it would be better if words in the same semantic group were presented separately. The findings of this research can also help syllabus designers and course book writers to design more effective textbooks for elementary, intermediate and advanced learners. Also, it is recommended to design a teacher's guide with the focus on how to present and instruct vocabularies for the content being used in different systems clearly, because not having a guide can lead to controversial issues faced by different teachers.

The result of the present research and the ones reviewed in the literature can have suggestions and generalizations for the educators, students and text book writers. The effective use of semantic and thematic clustering technique in vocabulary learning and teaching can be facilitative in the vocabulary learning process. Like the similar results obtained in studies of Hippner-Page (2002), Tinkham (1993), Gairns and Redman (1986), Seal (1991), Al-Jabri (2005) and many others, it can be suggested that there is strong possibility that learners can benefit from word semantic and thematic clustering and the vocabulary achievement in the groups of participants. Pedagogically, to teach vocabulary it is important that teachers and researchers find effective ways to help the language learners acquire vocabulary easier. Therefore, language practitioners need to find new ways and introduce them to their learners.

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