The Effect of Semantic Mapping Strategy Instruction on Iranian Intermediate EFL Learners’ Listening Comprehension

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Abstract—The present study attempted to investigate the effect of semantic mapping strategy instruction on Iranian intermediate EFL learners’ listening comprehension. A quasi experimental research with the pretest-posttest control group design was used in this study. The study was conducted at Meraj language institute in Tabriz, Iran. A CELT test was administered and based on its results two classes were chosen as the homogenous ones, which were randomly assigned into the experimental and control groups, each with 35 students. After the listening comprehension pretest, which was already constructed for the purpose of this study, the experimental group received semantic mapping strategy instruction after listening to their supplementary books’ activities, while the control group did not receive this treatment. At the end of the 15 instructional sessions, the post test of listening was administered in both groups. The results of Independent-Samples t-test indicated that the experimental group outperformed the control group in listening comprehension. Hence, it is concluded that semantic mapping strategy instruction in comparison with commonplace approaches significantly enhanced Iranian intermediate EFL learners’ listening comprehension. The implications are provided for the syllabus designers, textbook writers and EFL teachers and learners.

Index Terms—instruction, listening comprehension, semantic mapping, strategy

I. INTRODUCTION

Listening is a receptive behavior in knowledge acquisition. It was not until the late 1940s that listening was considered as a field of investigation as a result of the works of the “fathers of listening” such as Brown, Nichols and Weaver (Feyten, 1991, p. 173). Most of the students excel at understanding written text, but still struggle with listening comprehension; because listening often proves to be a challenging task for second language learners and when listening one must deal with new grammar and vocabulary as well as the clarity, pace, and intonation of the speaker (Grochowski, 2006).

Teachers tend to overlook the process of helping students learn to listen (Vandergrift, 2004). They usually employ the traditional lecture method that is “a passive, one-way method of transferring information” (Sullivan & McIntosh, 1996, p. 1). It is necessary for EFL teachers and learners to have both suitable teaching methods and learning approaches in listening classrooms where teachers would not be “attempting to teach learners only the pertinent information that they would need to pass a test” (McMahon, Lytle, & Smith, 2005, p. 180). In order to compensate for the above weakness, utilizing a variety of learning strategies which makes listening classes more enjoyable and encourages learners in their own listening learning is suggested (Mai, Ngoc, & Thao, 2014).

Learning strategies suitable for individuals’ need facilitate English learning. A strategy is an action selected deliberately to achieve particular goals (Kashani Mahmood, Reymani Nikoo, & Bonyadi, 2013). Amidst the instructional strategies that research validates to be used in the classroom to assist students’ learning, employing some strategies such as semantic mapping or graphic organizer is more noticeable (Marzano, Pickering, & Pollock, 2001). The instructional methods generate an instructional strategy which aids students in spotting similarities and differences in the information that is accessible within their classrooms (Kashani Mahmood et al., 2013).

One way to help learners to comprehend with difficulty of listening activity is to equip them with effective learning strategies like graphic organizers. They help make ideas visible; which are also powerful tools that lend themselves especially well to the teaching of reading or listening comprehension (Moore & Hall, 2012).

Semantic mapping is a graphic presentation that illustrates the interaction between words and ideas, visually, to the learners as they carry out the learning task. It is one of the cognitive strategies which resembles Ausubel’s (1968) advance organizer as a preliminary means to triggers learners’ schemata or background knowledge. Graphic Organizers are visual presentations of overall related concepts (Kashani Mahmood et al., 2013).

Semantic mapping has been used in a variety of ways including pre reading or pre listening activities designed to help learners understand and remember vocabulary that will be heard or read (Oxford, 1990). It is vital to explore
prominent factors that end in learners’ systematic learning in the classroom (Slavin, 2008; Van Merrienboer & Kirshner, 2007).

An important part of learning a foreign language is mastering learning. Mastering the fundamentals of learning not only can help language learners in learning vocabulary, acquiring basic structures, and improving the necessary linguistic and communication skills, but also help the learners to be in active control of their own learning processes (Soleiman & Hajghani, 2013). There is a consensus that the issue of teaching and learning English in Iran is linked to the teaching methodology and improper methods the English teachers utilize (see Asai, 1959; Dahmardeh, 2010; Noora, 2008). EFL teachers depend mostly on fruitless traditional strategies which are mainly wordlists, definitions and translations (Abdelrahman, 2013). Beckman (2002) supposed that strategic learners had strong motivation, self-monitoring, and self-regulation ability.

From among various types of learning strategies, semantically-based strategies are almost neglected in EFL classrooms whose application seems very crucial in the EFL learning context of Iran. Most of the latest studies are focused on general language learning strategies. The significance of this study derives from the fact that it is, to the researchers’ knowledge, the first to investigate the effectiveness of using semantic mapping strategy on intermediate learners’ listening comprehension skills in Iran.

Accordingly, the present study aimed to probe into this important issue by providing formal instruction of the semantic mapping strategies to a group of Iranian EFL learners and comparing their listening comprehension with another group not receiving such an instruction. Therefore, the following null hypothesis was formulated: Teaching semantic mapping strategy does not enhance listening comprehension of Iranian intermediate EFL learners.

II. REVIEW OF THE RELATED LITERATURE

A. Theoretical Views

The graphic organizer is a teaching/learning tool to assist student comprehension and organization of content of texts (Tang, 1994). Guardado (2001) defines graphic organizers as a carefully planned diagram that expresses a message that is comprehensive than simply the sum of its parts, and it can be more apparent and economic than a heavily packed original text.

The concept “advance organizer” was first introduced by Ausubel (1963, as cited in Nowell, 1984), and it aims “to facilitate the learning and retention of the material which follows it. The advance organizer serves as a bridge or anchorage, relating the material to be learned to information already known by the students” (p. 1).

Williams and Burden (1997) consider the advance organizers as a “helpful strategy for teachers to aid their learners’ memorization of information” (p. 17). They mention that “it can be both helpful and important when introducing a new topic or set of ideas to begin by talking about what will follow from these ideas even before the ideas themselves are grasped” (p. 17). Although being typically connected with assisting reading, they are currently used as important didactic devices in diversity of skills such as listening and writing (Guardado, 2001).

Information provided in advance organizers in a language class tend to be cognate recognition, syllable-morpheme information, contextualized meaning, chronological ordering, time frame reference, cross-cultural differences, redefinition, and direction of discourse (Spinelli & Suskin, 1987). Advance organizers can include “pictures, verbal descriptions, key vocabulary, pre-questioning techniques, and cultural background knowledge” (Herron, 1994, p.179).

Clarke (1990) describes graphic organizers as “words on paper, arranged to represent an individual’s understanding of the relationship between words. Whereas conventions of sentence structure make most writing linear in form graphic organizers take their form from the presumed structure of relationships among ideas” (p. 30). A further definition of graphic organizers is put by Tate (2003), who regards them as visual accounts, which aid the left and right hemispheres of the brain to comprehend information and seek for patterns in the information it processes.

Also, Pittelman and Johnson (1985) claimed that semantic maps can help teachers evaluate the learners’ previous knowledge, and prepare them for dealing with the text. According to Pearson and Johnson (1978, as cited in Clark, 2005) semantic mapping is a strategy that helps students to organize the information they know about a subject into different categories.

B. Empirical Studies

Most of the studies in the area of advance organizers like semantic mapping have been conducted on their effectiveness on reading comprehension (e.g., Hudson, 1982) and vocabulary (Abu-Hussein, 2007; Srinawaratt, 2001; Zaghloul, 2004). For instance, Hudson (1982) compared two advance organizers, a visual advance organizer and a non-visual organizer on reading and found that the visual organizer was superior to the non-visual one. Few empirical studies have been conducted to test assumptions about advance organizers for L2 learners’ listening comprehension.

In one of the first studies by Hadley (as cited in Taichert, 1996), he reported that pictures aided listening comprehension. Mueller (1980) used beginning German as a foreign language students in university classes. The advance organizer was a simple picture which described an interview, upcoming listening material in this experiment. The two experimental groups were exposed to the picture, the only difference being that the first group saw the picture before listening to the material and the other afterwards. The control group did not have any visual aids. For those who learned little or nothing of the target language in high school, a significant difference was seen, and the picture
addressed before the listening task was most effective. In contrast, students who learned German for four to six semesters in high school were not affected by the visual aids conditions.

Another experiment reported by Ruhe (1996), involved the effectiveness of key visuals or semantic maps on lecture comprehension by junior college students. Subjects were divided into four groups, a control group, a graphics group and two vocabulary groups one of which received the list of words from the nodes in graphics whereas the other received an alphabetical list of words. For analysis, the questions were categorized into graphic related and non graphic related. The graphics group did significantly better on graphic related questions than the other groups. As a conclusion the author states that since the mean scores of vocabulary groups did not differ considerably from that of the control group “it was the graphics that were responsible for enhanced comprehension in graphics group” (p.52). Because the graphics participants had the graphics in front of them when answering the questions it is predictable that they would do better than other groups (Burger, 2001).

Tsubaki and Keiko Nakayama (n.d.) explored the impact of an advance organizer on the comprehension of a lecture. The lecture outline, provided before lecture, served as advance organizer. The aim of the study was to examine if Japanese students as EFL learners with relative lower English proficiency for lecture listening would privilege the lecture outline or not. The learners were randomly assigned either to the experimental group or the control group and they were requested to note what they remembered after listening to the lecture. The control group was not provided with the outline. The results of this study recommended that the advance organizer enhanced lower proficiency group’s performance but the higher proficiency group did not benefit from its use. The findings of this study imply that teachers should provide appropriate materials for the level of English proficiency for English acquisition.

In this regard, Burger (2001) conducted a research to find out the role of key visuals or graphic organizers in improving listening comprehension of ESL students; the purpose of this study was to compare two preparation techniques to see which was more helpful for ESL students. There were two groups of university students who received training with problem solving lectures; one group received vocabulary instruction before lectures and the other group worked with a key visual or graphic organizer, a third group, the control group, received no training. All groups improved in their ability to understand the test lectures which made it impossible to say whether either of pre training methods was more effective than the other. The teacher’s and students’ reaction to graphic organizers was positive and the technique made them conscious of lecture comprehension. Thus the researcher concluded that “the language training courses should incorporate many techniques among which are using graphic organizers for information presented in lectures” (p.iv).

III. Method

A. Participants

This study was conducted in an intermediate class at Meraj language institute in Tabriz in East-Azarbijan, Iran, in year 2014. The participants ranged in age from 20 to 26 and were selected based on a standardized proficiency test (CELT) administered to 150 female students and 70 of them whose scores fell between one standard deviation above and below the mean were selected. They were divided into two equal groups consisting of 35 students in control and 35 in experimental groups.

B. Instruments and Materials

A set of instruments utilized in the study was a test to ascertain the homogeneity of the subjects, a pre test and posttest and a supplementary book. The subjects took the test of listening section of the Comprehensive English Language Test (CELT) (Harris & Palmer, 1970). The listening section of the CELT has 50 multiple choice items divided into three subsections; in the first subsection test takers should select the best answer to the question they heard, in the second they are required to paraphrase a statement and the third requires them to listen to a short conversation and draw a conclusion based on it. The test takes about thirty minutes to complete (Haggstrom, Morgan, & Wieczorek, 1995).

Pretest and posttest of listening were extracted from the book entitled Listen Here (West, 2010), which is a supplementary book for lower intermediate and intermediate students, taught during the semester. It includes 28 units covering a wide range of topics and situations and tasks to improve listening skills in English.

The pretest and post test consisted of listening comprehension questions selected from the listening activities of the supplementary book and had the same format. They were checked for content validity by four English teachers to make sure that they were appropriate. They were also checked for internal consistency through Cronbach’s Alpha and a high internal reliability was obtained for the pretest ($\alpha=.84$) and posttest ($\alpha=.88$), which seemed promising for the purpose of this study. The material used in the study was the same for both groups. The first eight unites of the supplementary book were covered during the semester which includes different listening activities and vocabulary exercises.

C. Procedure

To accomplish the purpose of this study first, 150 students were selected from Meraj language institute. Due to practical limitations it was impossible to select a randomized sample; therefore, an intact group design was adopted. Second, the proficiency test was conducted on the students during the first week of the course; it helped to find the two
classes of homogenous students who were going to act as the control group and experimental group. Third, the pretest which was constructed and validated for the purpose of this research was administered among the participants. Then the treatment sessions started.

One of the researchers as their teacher first presented and described the semantic mapping strategy explicitly for the students at the pre listening phase and gave them enough practice on how to use it. The following time frame was made: forty-five-minute of the standard ninety-minute class time was allocated to usual class activities and covering the course book; the remaining forty-five minutes were devoted to working on supplementary book and doing its exercises using semantic mapping strategy provided by the teacher for the experimental group, and the usual listening instruction techniques for the control group.

Each lesson of the supplementary book introduces a topic; in the experimental group, each session, after listening to the activities of the book, the teacher wrote the central theme of the lesson on the board. The students were encouraged to work individually, in pairs, or in groups and invited to provide their own semantic maps about the central topic. They were asked to suggest words related to the central concept using the words provided in the listening activity while being allowed to ask for words they didn’t know the meaning. The teacher wrote the suggested words on the board and connected them with lines and arrows to the main topic. All semantic maps were created on the board and shared with the class. After creating the semantic maps, the students had to explain to the rest of the class why they have included words in their semantic maps and explained and described words that were not known by the students. Then the students copied the maps in their notebooks. After listening to the text, students took part in some post-listening activities such as writing journal or discussing and sharing views with the classmates. In the control group, the students were not encouraged to organize new words around a central concept. The teacher first presented the listening topic, exposed the students to some new words and made the opportunity for them to be involved in the listening tasks. The students first listened to the listening activity while they were allowed to take notes of the words they did not know the meaning; after that the teacher invited them to ask their questions. In this phase, the teacher asked other learners to provide synonyms, definitions, or first language equivalents and whenever no one could explain the meaning they were encouraged to check the dictionary. Once the learners had no more questions the teacher let the students to listen for the second time while doing the exercises simultaneously. At last, the teacher looked through their answers and provided the feedback to them.

After 15 weeks, the students in both classes took posttest which acted as an assessment device to measure the improvement in listening competence in the experimental group who had been taught with semantic mapping instruction activities in comparison with that of the students in the control group who were trained with no semantic mapping instruction activities.

D. Design

Non-randomized intact group quasi-experimental design with the pretest, posttest and control group was used in this study. The semantic mapping instruction was the independent variable and listening comprehension was the dependent variable of the study.

E. Data Analysis

The collected data were entered into the SPSS 20 for further analysis. As the researchers intended to compare the two groups’ performance, an Independent-Samples t-test was run to see if the two groups performed significantly different on the listening comprehension tests.

IV. RESULTS AND DISCUSSIONS

After the administration of CELT test in the first session of the study, the subjects were divided into two intact groups (one experimental and one control group). The CELT listening test has 50 items, ranging between 0 and 50 in the total scores; after calculating the scores, 70 students with the scores of one standard deviation above and below the mean were selected. Table 1 presents the descriptive statistics for this test.

<table>
<thead>
<tr>
<th>Table 1. DESCRIPTIVE STATISTICS FOR THE CELT</th>
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<td>CELT</td>
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Based on the results of descriptive statistics, 70 learners whose scores fell between one SD below and above the mean (i.e., 24 – 46, respectively) were considered as the participants of the study and were randomly assigned into the experimental and control groups with 35 students in each.

In order to establish the homogeneity of the groups in terms of listening comprehension prior to the study, the pre test which was already constructed was administered to the groups. Then the performance of the students on the pretest was compared and analyzed applying an Independent-Samples t-test; the results of which are displayed in Tables 2 and 3.
Table 2 indicates that the mean scores of the pretest were \((M=25.05, SD=5.06)\) for the control group and \((M=25.09, SD=5.03)\) for the experimental group which shows that the students in both classes had almost the same English listening competence level.

Table 3.

<table>
<thead>
<tr>
<th>Levene's Test for Equality of Variances</th>
<th>t-test for Equality of Means</th>
<th>t-test for Equality of Means</th>
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<tbody>
<tr>
<td>Equal variances assumed</td>
<td>3.425</td>
<td>0.104</td>
</tr>
<tr>
<td>Equal variances not assumed</td>
<td>-0.102</td>
<td>85.632</td>
</tr>
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</table>

Note. \(*p < .05\)

As Levene’s Test for Equality of Variances in the Table 3 denotes, the column Sig. displays the value of .073 which exceeded .05; thus, the row Equal variances assumed would be considered in the interpretation. As the value of Sig. (2-tailed) at the row Equal variances assumed was .626 which was greater than .05, there was no significant difference in listening pretest mean scores between the control group and experimental group, which again exhibits the similarity in terms of learners’ English listening competence level between the two groups. Therefore the two research groups enjoyed similar level of listening comprehension, and the groups were not significantly different with respect to proficiency level prior to the study.

In order to examine whether semantic mapping instruction activities had impact on EFL learners’ listening comprehension, posttests were employed. There were 35 students in the control group and 35 students in the experimental group. However, few students in both classes didn’t participated in the posttest because they were absent on the day the tests were administered; therefore, only 33 students in the control group and 31 students in the experimental group took the posttest. Then, normality test was carried out on both groups’ scores and the results revealed that the distribution of the scores in both groups was normal. Therefore, an independent-samples t-test was run on the data obtained from the posttests. The results of the descriptive statistics and independent-samples t-test are presented in Table 4 and Table 5, respectively.

Table 4.

<table>
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<th>Group statistics for post test mean scores</th>
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<tr>
<td>Groups</td>
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<tr>
<td>Control group</td>
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<tr>
<td>Experimental group</td>
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Based on the results in Table 4, the mean score of the experimental group \((M=35.06, SD=5.83)\) was higher than the mean score of the control group \((M=22.10, SD=6.72)\). In order to test the null hypothesis of the study, an independent samples t-test was run to compare the mean scores of the control and experimental groups (see Table 5).

Table 5.

<table>
<thead>
<tr>
<th>Independent samples t-test analysis of the post test listening scores</th>
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<tr>
<td>Levene's Test for Equality of Variances</td>
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<td>-----------------------------------------</td>
</tr>
<tr>
<td>Equal variances assumed</td>
</tr>
<tr>
<td>Equal variances not assumed</td>
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</tbody>
</table>

Note. \(*p < .05\)

As Table 5 displays, there was a significant difference, \(t(70)=6.50, p=.002\), between the mean scores of the control and experimental groups. Therefore, the null hypothesis of the study is rejected, implying that the experimental group significantly outperformed the control group on the post-test.

The results revealed that semantic mapping strategies have statistically significant effect on Iranian intermediate EFL learners’ listening comprehension. This finding is in line with previous research findings concerning the effect of semantic mapping in the EFL classrooms for teaching a wide array of topics aimed at providing opportunities for
language development (Anders, Bos, & Filip, 1984; Margosein, Pascarella, & Pflaum, 1982; Stahl & Kapinus, 1991). This major effect of semantic mapping activities can be related to the fact that in semantic elaboration the relationships between words are discovered and thus more connections among them are made in the lexical knowledge system of the learner (Abdollahzadeh & Amiri Vardani, 2010). Researchers also assert that teachers can explicitly instruct students about the knowledge structures and integrate the use of different semantic maps to represent them (Early, 1990; Early & Tang, 1991; Mohan, 1986; Tang, 1993). Once students are able to use the concepts and the visuals, they can try out creating their own, and building oral and written discourse from maps prepared by the teacher, peers, or prefabricated graphics from other sources (Guardado, 2001).

Also, the findings of this study matched with the general conclusion drawn from other related studies (Bos & Andres, 1990; Crow & Quigley, 1985; Morin & Goebel, 2001; Zaid, 1995) that teaching semantic mapping strategy has a significant effect on learners’ language development by enhancing vocabulary learning. For instance, Morin and Goebel (2001) observed that vocabulary instruction that considers semantic mapping as an acquisition strategy is more efficient than those techniques that only teach words rather than strategies for learning words (Keshavarz, Ataei, & Mohammadi, 2006).

The results of this study demonstrate that although semantic mapping is costly in terms of class time, it can be very beneficial by supplying students with ample of information about new words and the interrelationships of the concepts connected with the words in their long-term memory (Abdollahzadeh & Amiri Vardani, 2010), which in turn helps them improve their listening comprehension.

V. CONCLUSION

The goal of this study was to obtain information about the usefulness of using semantic mapping strategies instruction on improving students’ listening comprehension in Iranian intermediate EFL classrooms. The results indicated the significant role of using semantic mapping strategies in enhancing the students’ vocabulary knowledge and as a result their listening comprehension ability. In other words, the results were in favor of using semantic maps in teaching words appeared in listening activities. Learning the vocabulary, which will be appeared in listening activities, would be more enjoyable for learners when they are taught through semantic mapping strategy instead of traditional ways of vocabulary learning.

Findings of this study have some implications for teachers, learners and syllabus designers. The teachers should help students in selecting the most appropriate strategies for developing their listening skills. They can instruct new lexical items by preparing some challenging and motivating vocabulary activities based on semantic mapping strategy and in this way they can promote their listening comprehension skill. Syllabus designers and textbook writers can design pre-listening activities in which the learners employ the semantic mapping strategies in learning the new vocabulary of the listening passage.

REFERENCES


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