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The Impact of Visualization and Graphic Organizers on EFL Learners' Cognitive, Emotional, and Behavioral Engagement and Listening

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Abstract
The present study examined the impact of visualization and graphic organizers as pre-listening strategies on English as a foreign language (EFL) learners' cognitive, behavioral, and emotional engagement and their listening comprehension. To do so, this study was carried out in three listening classes at Islamic Azad University of Mashhad. The participants included 80 junior EFL university students. A quasi experimental design with a control group and two experimental groups (graphic organizers and visualization) was utilized. Students' engagement was assessed through academic engagement questionnaire measuring behavioral, emotional, and cognitive aspects of academic engagement. A sample IELTS (International English Language Testing System) test was utilized to gauge students' level of listening proficiency. To examine the impact of the two intervention techniques on listening proficiency level, an analysis of variance (ANOVA) was run. A one-way between-groups multivariate analysis of variance (MANOVA) was utilized to investigate the role of graphic organizers and visualization in students' behavioral, cognitive, and emotional engagement. The results demonstrated the effectiveness of graphic organizers and visualization as pre-listening strategies in enhancing EFL university students' listening achievement as well as their engagement. The results of post-hoc analysis showed that visualization and graphic organizer techniques were equally influential in enhancing learners' listening proficiency. It was also found the emotional engagement exhibited the highest difference and cognitive engagement showed the lowest difference.

Keywords: Behavioral engagement; Cognitive engagement; Emotional engagement; Graphic organizers; Listening comprehension; Visualization

INTRODUCTION

Listening comprehension has an important status in teaching English as a second language for different reasons. How well you listen has a major impact on the quality of your relationship with others. You can hardly pass your examinations in academic courses if you do not listen comprehensively. Listeners must know how to extract meaning, how to revise the information received, and accordingly how to analyze them to be able to produce speech.

Constructivist view of listening focuses on the fact that listeners do not just receive and process meaning but rather construct the meaning according to their own purposes as well as their own

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background knowledge (Usó-Juan & Martínez-Flor, 2006). Listening is not an automatic skill and must be taught as the first skill. It influences on three other language skills, so teachers have to dedicate a great deal of time for teaching it. Listening comprehension requires special strategies. Various strategies and techniques have been proposed for teaching this skill effectively. The focus of this study is on two techniques as pre-listening strategies, namely visualization and graphic organizers.

Visualization refers to converting of words on the page into pictures in mind (Tomlinson, 2005). Researchers such as Center, Freeman, Robertson, and Outhred, (1999) as well as Guerrero (2003) have consistently provided support for the use of visualization techniques in assisting comprehension. It also has been considered as a means of engagement. The result of these studies indicated that those who visualized were able to recall and comprehend more of the text than those who did not visualize. There is a substantial evidence for remembering vocabulary by L2 learners in case of using visualization such as Dual Coding Theory (Paivio, 1971; Paivio, 2007; Sadoski & Paivio, 1994). In this theory, using both imagery and verbal codes cause remembering the words more effectively than counting on single code. Advantages of visualization in learning of L2 words and in aiding L2 comprehension were demonstrated in recent studies as well, for example, Boers, Eyckmans, and Stengers (2007) and Mazoyer, Tzourio-Mazoyer, Mazard, Denis, and Mellet (2002). It seems that those who use visualization can achieve more comprehension than those who do not. According to Tomlinson (2005), improving the ability of visualization by L2 readers can ease their engagement with the text and cause more comprehension of what is read.

The second listening strategy utilized in this study is graphic organizers, such as, knowledge map, concept maps, and advanced organizers. They are considered as communication tools that employ visual symbols to express knowledge, concepts, thoughts, or ideas, and the associations between them. It can be used for different purposes in teaching and learning environments. In the present study, concept mapping which is a variant of graphic organizers is the focus of study. It is a graphical hierarchical system and a cognitive tool to assist learners representing and organizing information and consequently deepening comprehension (Novak, 1998). They comprise concepts enclosed in boxes or circles, and the arrows or connecting lines, exhibiting the relationships between ideas (Ghanizadeh, 2011). The effect of Ausubel's meaningful learning theory can be shown on concept map approach developed by Novak (1998). Concept maps enhance recall and memory, and help in conflicting needs and mutual understanding (Novak, 1998). Followings are some of the aims for using concept maps:1) to form information 2) to connect new information with given knowledge 3) to recognize and establish concepts and their connections to each other 4) to test learner's understanding of a subject (Çakmak, 2010).

Although the literature on concept mapping has primarily been concerned with its application in L1 contexts, the benefits of concept maps in L2 setting have also been demonstrated. Fahim and Heidari (2006) reported the positive impact of concept mapping as a post listening strategy on the learners' listening comprehension. The study showed that after using concept mapping, students accomplished better comprehension by concentrating on key concepts. Pishghadam and Ghanizadeh (2006) investigated the effect of concept mapping on EFL learners' writing ability. The results of this study revealed the improvement of learners' writing ability in terms of quality and quantity of generating, organizing, and associating ideas. The contribution of concept maps as an assessment tool of L2 reading comprehension has also been verified by Ghanizadeh (2011). The results revealed that concept map can be a reliable and valid tool of L2 reading assessment, having the potential to assess discourse comprehension and connected understanding and making reconciliation between objective discrete-point tests and integrative ones.

Teachers are constantly trying to connect their students to learning because they know the crucial role of engagement in academic success. To fully understand this role, we need to know what engagement means. Some researchers such as Fredricks, Blumenfeld, Friedel, and Paris (2005) proposed three components of engagement as: a) behavioral engagement which refers to participation in learning activities and educational environments as well as displaying positive manner, such as following the classroom rules and norms and the absence of trouble-making behaviors such as avoiding of going to school; b) emotional engagement which refers to affective (positive and negative) feeling and attitudes toward school as well as identification with the school, that is feeling of being significant in school and being successful in outcomes related to school; c) cognitive engagement which refers to the employment of self-regulation toward learning as well as learning strategies and enthusiasm to exert the effort that is necessary for comprehension of difficult concepts and skills (Fredricks et al., 2005). In this study, the role of the afore-mentioned techniques (visualization and graphic organizers) on different aspects of EFL learning.

More specifically, the main purpose of this study is to investigate the effect of visualization and graphic organizers as pre-listening strategies on listening achievement. It also pursues inquiry of the impact of visualization and concept mapping on EFL learners' cognitive, behavioral, and emotional engagement. To do so, a quasi-experimental study with three groups (one control, two experimental groups) was designed. In this study, dependent variables are cognitive, behavioral, emotional engagement and listening comprehension. The independent variables are graphic organizers and visualization which serve as intervention techniques. To attain the objectives of the research, the following research questions were posed and investigated in the present study:

1. Does visualization as a pre-listening strategy enhance EFL learners' listening achievement?
2. Does graphic organizer as a pre-listening strategy enhance EFL learners' listening achievement?
3. Does visualization as a pre-listening strategy play any significant role in EFL learners' engagement (emotional, behavioral, and cognitive)?
4. Does graphic organizers as a pre-listening strategy play any significant role in EFL learners' engagement (emotional, behavioral, and cognitive)?

METHOD

Participants

The participants of the present study comprised 80 EFL students studying English language teaching (ELT) at Islamic Azad University, Mashhad branch (faculty of law and foreign languages). They were junior university students. The course under study was listening comprehension. They comprised 20 students in control group, 30 students in visualization group, and 30 in concept maps group.

Instruments

Student Engagement Scale (SES)

To measure students' engagement, the scale designed and validated by Golestani (2017) was employed. It was developed based on Fredricks et al., (2005) three dimensional model assessing *cognitive, behavioral, and emotional* engagement. The scale has 24 items. The items from 1 to 9 are dedicated to the behavioral engagement. Emotional engagement has 7 items (10, 11, 12, 17, 18, 22, and 23) and the cognitive engagement encompasses the item numbers (13, 14, 15, 16, 19, 20, 21, and 24). The validity of the scale was tested using the LISREL 8.50 statistical package. The chi-square/*df* ratio (2.81), the RMSEA (0.06) and the NFI=.90, CFI=.91, and GFI= .94 all reached the acceptable fit thresholds and the Cronbach's alpha estimated for each type of engagement was: Behavioral (0.89), Cognitive (0.90), and Emotional (0.84).

Listening sample of IELTS tests

The second instrument is the listening sample test of IELTS from Cambridge University Press (2007). It had 40 questions that were required for students to answer. It included 4 sections, each one consisted of ten questions.

Procedure

As states earlier, the participants of the present study were ELT university students. In the second week of the first semester of the year 1396, students in control, graphic organizer, and visualization groups were given engagement questionnaire and a sample of IELTS test. They filled out the questionnaires and then the test was administered to each group. This was done to ensure the homogeneity of the groups in terms of their listening comprehension and the level of their engagement prior to the study. The students answered the listening test on the answer sheet while they were listening to the tape. Then from the third week of the semester to week 16, in both visualization group and in graphic organizer group, some techniques as pre- listening strategies were implemented. In the control group, nevertheless, no innovative technique was instructed in the pre-listening phase, just the traditional approach of listening to the audio and answering questions or discussing the gist of each text. At the end of semester (week 16), the students filled the same questionnaire and answered the same listening test to verify the effect of these strategies on the two experimental groups.

In one experimental group, visualization was the treatment, and in the other group, graphic organizer was employed. In control group, nevertheless, traditional method was followed in teaching listening comprehension with no particular or innovative technique employed. They listened to the text and answered the questions which were then checked by the teacher. The adopted procedure in visualization group is explained in the followings:

Visualization group

To teach listening skill effectively, visualization technique (converting the words into pictures in mind) was employed in this group. To do so, when the students were supposed to listen to a story, say, "*Pride and Prejudice",* they were asked to *imagine and visualize* each scenario as they listened to it and then checked the pictures as they found further information on their books. They were also told to focus on their images on the parts of the text that were familiar to them and then to use the images to assist them work out what was unfamiliar.

Another instruction was to picture a summary of each paragraph of the book after listening to it. To offer more engagement for students to what they heard, some activities were designed to induce visual imaging subconsciously. One of the most effective activities is *drawing*. Pre-listening drawing helped the teacher to make sure that the students have related images in their minds when they started listening. These images were activation of their schemata or knowledge of the world. These activities involved drawing a prediction of characters, or setting from the book or the topic of the text. Or they involved drawing scenes from student's own lives that were related to the topic. The students were asked to draw the story scene they had listened about two main characters of "Pride and Prejudice" (Mr. Darcy and Ms. Elizabeth Bennet) while they were talking to each other in a ball that was held in the town.

Also they were asked to connect the text of the book American File 3 (Hanna and Jamy) to an event in their own lives or to one in another text, before they listened to the story and saw what happened to Jamy in the car accident.

Another technique that was considered as an effective way of inducing visual imaging was *miming*. Before they listened to the text, one student started miming the activity related to the topic "The most (and least) dangerous things while driving a car". Other students could guess what activities he meant in his miming. Then they listened to the text in order to check their answers. This activity seems to help to achieve a visual and kinesthetic effect which could enhance involvement, understanding, and retention.

In *connection* activities, the students were asked to connect the text, "How your position in your family influences your character" to their own lives. They used visual imaging to achieve this connection. They were the only child, the middle, the youngest or the oldest child in their family and they could think and saw what common characteristics they had to the ones mentioned as psychologists believed in the file played to them.

Another activity that was done in the class was *role play*. In this activity, two volunteer students took the dialogue activities to visualize what students heard, they could personalize interpretation and relations of what they had heard.

Graphic organizer group

Various pre-listening activities were designed by the use of graphic organizers and concept maps. For instance, in an important part of each unit, there were several sounds in section pronunciation, each sound in separate part of a table. This chart as a concept map can be a basis for connecting new information and previous knowledge. In another activity, the students were supposed to add a note according to their background knowledge in some circles after listening to the file, for example, "a friend you know very well or a social networking cite you use regularly, then compare the circles with a partner and ask them 3 questions about the things he or she had written". In this activity, superordinate learning arises, because new information are constructed that integrate large areas of knowledge which were formerly known as closely connected.

As the third activity, the students listened to some phrases in a chart. The topic was "reacting in what people say". Then they wrote people's reactions in each column of the chart. For example, They wrote what they said when heard something surprising, or something interesting. Through this activity, the students could make use of concept map in connecting what they already knew.

The next activity was looking at some highlighted words and phrases related to language learning and figuring out their meaning from the context. Then they were supposed to

answer some questions. In this activity, concept map helped to construct existing valid ideas and reduce the chances for supporting existing invalid ideas. Answering to some questions and generating ideas mean that the learners use advanced level of learning and higher order thinking skills of synthesis and evaluation. Using graphic organizers also helped to empower the students to engage in conversation by thinking about knowledge and to engage them in critical thinking about the content they studied.

Method of data analysis

To analyze the data, the responses obtained from the questionnaire and the test were arranged and analyzed through analysis of variance (ANOVA) and multivariate analysis of variance (MANOVA) via SPSS 25. ANOVA examined the effects of two dependent variables (visualization and graphic organizers) on listening comprehension.

MANOVA was used to investigate the effects of the two techniques on three types of engagement (cognitive, behavioral, and emotional).

RESULTS

To examine whether there is any significant difference between control and experimental groups (visualization and graphic organizer groups) regarding their listening proficiency level, an *ANOVA* was run. Table 1 below summarizes the descriptive results of listening proficiency level in three groups. As the table shows, the mean scores of listening proficiency across participants in the three groups are slightly different: control (M=14.20, SD=6.44), visualization (M=18.63, SD=8.30), and graphic organizer (M=18.76, SD=8.25).

Throughout this chapter, group 1 stands for control, group 2 for visualization, and group 3 for graphic organizer group.

Table 1

Descriptive Statistics of Listening Proficiency Level across Control and Experimental Groups

	N	Mean	Std. Deviation	Std. Error	Minimum	Maximum
1.00 (control)	20	14.20	6.44	1.44	2.00	26.00
2.00 (visualization)	30	18.63	8.30	1.51	3.00	38.00
3.00 (concept map)	30	18.76	8.25	1.50	3.00	34.00
Total	80	17.57	8.01	.89	2.00	38.00

To see whether these observed differences are statistically significant, an ANOVA was run. Table 2 presents the results of *ANOVA* on listening proficiency level. As can be seen, there is not a statistically significant difference between the three groups regarding their listening proficiency (F= 2.45, p<.05). In other words, the three groups were homogenous regarding their listening proficiency level before the study.

Table 2

ANOVA Table Showing the Results of Pretest on Listening Proficiency

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	304.01	2	152.00	2.45	.092
Within Groups	4765.53	77	61.89		
Total	5069.55	79			

To ensure that the participants of the two groups were homogenous in the level of their Cognitive, Behavioral, and Emotional Engagement, a one-way between-groups multivariate analysis of variance (*MANOVA*) was run. Three dependent variables were generated: cognitive, behavioral, and emotional engagement. The independent variable was group (control and experimental groups). Table 3 displays statistical analysis of the three groups regarding their engagement. As can be seen, there are slight differences in the mean scores of cognitive, behavioral, and emotional engagement across the three groups.

Table 3

Descriptive Statistics of Engagement across Control and Experimental Groups

	Groups	Mean	Std. Deviation	N
Beh1	1.00	33.10	3.65	20
	2.00	36.23	5.54	30
	3.00	36.03	5.19	30
	Total	35.37	5.11	80
Emo1	1.00	23.20	4.26	20
	2.00	26.53	4.96	30
	3.00	25.50	4.99	30
	Total	25.31	4.92	80
Cog1	1.00	26.10	4.32	20
	2.00	29.36	4.76	30
	3.00	29.50	4.46	30
	Total	28.60	4.71	80

To see if these differences are statistically different *MANOVA* was used. Preliminary assumption testing was conducted to check for normality, linearity, univariate and multivariate outliers, homogeneity of variance covariance matrices, and multicollinearity, with no serious violations noted. The results of *MANOVA* presented in Table 4 revealed that was not a statistically significant difference between the three groups on the combined dependent variables:(F=1.67, p= .000, Wilks' Lambda=.87).

Table 4
MANOVA Table Displaying the Results of Engagement across Control and Experimental Groups

Effect		alue	F	Hypothesis df	Error df	Sig.
Level	Wilks' Lambda	.87	1.67	6.00	150.00	.13

To investigate the effect of visualization and graphic organizers on students' listening achievement, the three groups were examined in the post-test. First, the means of the three groups in the post-test were calculated. As can be seen in Table 5, the mean of the visualization group groups is 24.96, for graphic organizer group is 25.00, and for the control groups is 19.30.

Table 5
Descriptive Statistics of Listening Proficiency Level across Control and Experimental Groups

	N	Mean	Std. Deviation	Std. Error	Minimum	Maximum
1.00	20	19.30	5.64	1.26	11.00	32.00
2.00	30	24.96	7.15	1.30	11.00	38.00
3.00	30	25.00	7.30	1.33	10.00	40.00
Total	80	23.56	7.22	.80	10.00	40.00

To investigate whether these differences are statistically significant, an *ANOVA* was run (See Table 6). As the results of *ANOVA* shows, there is a statistically significant difference between experimental and control groups (F= 5.12, p <.05) in their listening proficiency. In other words, it can be said that the two techniques (visualization and graphic organizers) utilized in experimental group resulted in higher listening achievement.

Table 6
ANOVA Table Showing the Results of Post-test on Listening Achievement

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	484.52	2	242.26	5.12	.008
Within Groups	3637.16	77	47.23		
Total	4121.68	79			

To locate the exact location of the differences, a Scheffe's test was applied to the data. The results are displayed in Table 7. As the table indicates, there is a significant difference between control and visualization group (p=.021), between control and graphic organizer group (p= .020), but not between visualization and graphic organizer group (p=1.00). It implies that visualization and graphic organizer techniques were equally influential in enhancing university students' listening proficiency.

Table 7

The Results of Sheffe's Test

(I) Groups	(J) Groups	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
1.00	2.00	-5.66*	1.98	.021	-10.61	-.71
	3.00	-5.70*	1.98	.020	-10.65	-.74
2.00	1.00	5.66*	1.98	.021	.71	10.61
	3.00	-.03	1.77	1.000	-4.46	4.39
3.00	1.00	5.70*	1.98	.020	.74	10.65
	2.00	.03	1.77	1.00	-4.39	4.46

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

The following Table (Table 8) presents the descriptive statistics of cognitive, behavioral, and emotional engagement across control and experimental groups in posttest. As the table reveals, the mean scores of all types of engagement are higher in experimental group:

Behavioral: control (*M*=31.60, *SD*=4.76), visualization (*M*=37.63, *SD*=5.41), graphic organizers (*M*=35.30, *SD*=6.31).

Emotional: control (*M*=23.05, *SD*=4.57), visualization (*M*=27.63, *SD*=4.84), graphic organizers (*M*=29.56, *SD*=5.84).

Cognitive: control (*M*=25.75, *SD*=5.08), visualization (*M*=30.33, *SD*=5.49), graphic organizers (*M*=29.33, *SD*=5.41).

Table 8

Descriptive Statistics of Engagement across Control and Experimental Groups

	Groups	Mean	Std. Deviation	N
Beh2	1.00	31.60	4.76	20
	2.00	37.63	5.41	30
	3.00	35.30	6.31	30
	Total	35.25	6.03	80
Emo2	1.00	23.05	4.57	20
	2.00	27.33	4.84	30
	3.00	29.56	5.84	30
	Total	27.10	5.71	80
Cog2	1.00	25.75	5.08	20
	2.00	30.33	5.49	30
	3.00	29.23	5.41	30
	Total	28.77	5.60	80

To see if these observed differences are significant statistically, a one-way between-groups multivariate analysis of variance (*MANOVA*) was run. Preliminary assumption testing was conducted to check for normality, linearity, univariate and multivariate outliers, homogeneity of variance covariance matrices, and multicollinearity, with no serious violations noted. The

results of *MANOVA* presented in Table 9 revealed that was a statistically significant difference between the two groups on the combined dependent variables (engagement): (F=7.51, p= .000, Wilks' Lambda=.59). The effect size computed via partial eta squared was found to be .23, which is a quite high magnitude according to Cohen's F. This implies that about 23 percent of variance in engagement can be accounted for by the treatment utilized in experimental groups.

Table 9
MANOVA Table Displaying the Results of Engagement across Control and Experimental Groups

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Level	Wilks' Lambda	.59	7.51	36.00	150.00	.00	.23

The follow-up analysis represented in Table 10 demonstrated that this difference holds true across all three engagements: Behavioral (F=6.90, p= .002, partial eta squared =.15), Emotional (F=9.54, p= .000, partial eta squared =.19), and Cognitive (F=4.54, p= .013, partial eta squared =.10). As can be seen, the highest difference is observed in Emotional engagement and the lowest difference is obtained for Cognitive engagement.

Table 10
MANOVA Table Displaying the Results of Three Types of Engagement across Control and Experimental Groups

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	Beh2	436.93[a]	2	218.46	6.90	.002	.15
	Emo2	512.27[b]	2	256.10	9.54	.000	.19
	Cog2	262.17[c]	2	131.08	4.55	.013	.10
Intercept	Beh2	93661.87	1	93661.86	2958.06	.000	.97
	Emo2	54788.53	1	54788.59	2041.00	.000	.96
	Cog2	62390.80	1	62390.86	2168.12	.000	.96
Groups	Beh2	436.93	2	218.46	6.90	.002	.15
	Emo2	512.27	2	256.10	9.54	.000	.19
	Cog2	262.16	2	131.08	4.55	.013	.10
Error	Beh2	2438.06	77	31.66			
	Emo2	2066.98	77	26.84			
	Cog2	2215.78	77	28.77			
Total	Beh2	102280.00	80				
	Emo2	61332.00	80				
	Cog2	68718.00	80				
Corrected Total	Beh2	2875.00	79				
	Emo2	2579.20	79				
	Cog2	2477.95	79				

a. R Squared = .152 (Adjusted R Squared = .130)
b. R Squared = .199 (Adjusted R Squared = .178)
c. R Squared = .106 (Adjusted R Squared = .083)

To investigate the differences in engagement across the three groups, a Scheffe's test was applied to the data. It was revealed that for Behavioral engagement, there is a significant difference for control and visualization group, but not for visualization and graphic organizer group as well as control and graphic organizer group. For Emotional engagement, there are significant differences between control and the two experimental groups but not between the two experimental groups. For Cognitive engagement, there is a significant difference for control and visualization group, but not for visualization and graphic organizer group as well as control and graphic organizer group.

Table 11
Scheffe's Test for Locating the Differences

Dependent Variable	(I) Groups	(J) Groups	Mean Difference (I-J)	Std. Error	Sig.
Beh2	1.00	2.00	-6.03*	1.62	.002
		3.00	-3.70	1.62	.081
	2.00	1.00	6.03*	1.62	.002
		3.00	2.33	1.45	.281
	3.00	1.00	3.70	1.62	.081
		2.00	-2.33	1.45	.281
Emo2	1.00	2.00	-4.28*	1.49	.020
		3.00	-6.51*	1.49	.000
	2.00	1.00	4.28*	1.49	.020
		3.00	-2.23	1.33	.254
	3.00	1.00	6.51*	1.49	.000
		2.00	2.23	1.33	.254
Cog2	1.00	2.00	-4.58*	1.54	.016
		3.00	-3.48	1.54	.086
	2.00	1.00	4.58*	1.54	.016
		3.00	1.10	1.38	.730
	3.00	1.00	3.48		
		2.00	-1.10	1.38	.730

DISCUSSION

As already pointed out, the objective of this study was to investigate the impact of pre-listening strategies (graphic organizers and visualization) on learners' engagement and their listening achievement. The prominence of listening in language learning can hardly be overestimated. Through reception, we internalize linguistic knowledge without which we could not produce language. In classroom, students always do more listening than speaking. Nonetheless, listening skill has been the most demanding skills to learn among the four language learning skills. This calls for devising and adapting innovative and alternative methods and techniques for teaching listening skills. Students may listen to the pedagogical materials provided for doing classroom activities mechanically without being engaged in learning effectively. According to Ausubel, Novak, and Hanesian's (1984) theory, those

students who engage in process of learning are more successful in classrooms. Referring to this study, two techniques of visualization and graphic organizers were studied as enhancing EFL learners' engagement and listening comprehension.

Regarding the first research question asking whether visualization as a pre-listening strategy enhances listening achievement, the results indicated that there is a statistically significant difference between control group and visualization group in their listening proficiency. In other words, this technique which was utilized in experimental group resulted in higher listening achievement. Previous research has shown that visualization can help learners to accomplish higher level of understanding, retention, and recall of language experience (Tomlinson, 2005). It also helps learners to use their inner speech through which they practice what they mean to say. This is in accordance with studies demonstrating the role of inner voice and visualization in effective L2 learning. According to Tomlinson (1993), improving the ability of visualization by L2 readers can ease their comprehension of the reading text and cause more comprehension of what is read. Also, there is extensive evidence that L2 learners are able to recall vocabulary when they visualize new lexical items resulting in more effective understanding. Based on the findings of the present study, it seems visualization can have the same contribution to listening comprehension.

Concerning the second research question probing whether graphic organizers as a pre-listening strategy enhances listening achievement, the result demonstrated that graphic organizers enhanced listening comprehension. It is believed that via graphic organizers including concept mapping, learners move from representational meaning to conceptual meaning and even share the connotation of ideas that will ease the formation of new knowledge (Novak & Gowin, 1984). Learners use concept map to develop new plans to elaborate notions that they previously know and integrate them with new concepts to create meaning and knowledge (Novak, 1998). This in turn enhances comprehension that has vital role in listening achievement.

Studies have shown that after using concept mapping, students accomplish better comprehension by concentrating on key concepts. This is in line with Ghanizadeh (2007) study demonstrating that concept maps have crucial impact on EFL learner's reading comprehension. In another study, Pishghadam and Ghanizadeh (2006) demonstrated the same facilitative role of concept mapping in the domain of writing ability of EFL learners. It seems that this finding can be generalized to listening comprehension, because of the identical and receptive nature of the two skills.

Regarding the third research question asking whether visualization as a pre-listening strategy play any significant role in EFL learners' engagement, it appeared that visualization helped learners to understand and recall more than those who did not. This technique can ease learners' engagement with the text and cause more comprehension of what they listen to. In other words, these students will be more powerful in encoding new concepts and in retention and recall. This in turn is expected to promote their engagement in the class behaviorally, cognitively, and emotionally given that effective learning would naturally contribute to more engagement in the class. It was discovered that all three types of engagement were positively influenced in the experimental group. Moreover, the highest difference was observed in emotional engagement and the lowest difference was observed in cognitive engagement. As stated earlier, emotional engagement refers to affective attitudes toward and identification with the class belonging. It seems plausible when students visualize the materials, their interest and sense of attachment to that material would increase as well. This is an indication of enhanced emotional engagement.

The fourth research question examined whether graphic organizers as a pre-listening strategy play any significant role in EFL learner's engagement. As the results of previous studies have shown, in any learning setting, the teacher can encourage meaningful learning by using var-

ious types of graphic organizers, in particular, concept maps (Novak, 1998). They are tools that lessen or eradicate rote learning and provoke meaningful learning. Learners can use concept maps to develop new plans to elaborate notions that they formerly know and integrate them with present concepts (Ghanizadeh, 2011). Concept map theory of learning is based on human constructivism that contends humans dynamically integrate thinking, feeling, and acting to create meaning and knowledge (Novak & Canas, 2008). So, learners can use advanced level of learning and higher order thinking skills of synthesis, evaluation, and choosing new concepts from the material. Thus, it appears undeniable that concept maps derived from human constructivism and focused on dynamic integration of cognition, feeling, and acting would encourage students' cognitive, behavioral, and emotional engagement.

The findings of the present study can have important implications for language teaching in that listening skill is an important component of EFL teaching and learning. It is a need for teachers to emphasize on this skill because of the importance of comprehensible input in learning a foreign language that is applicable through listening. So, the findings of this study are useful for teachers to work on the two techniques (visualization and concept mapping) with their significant impact on learners' listening proficiency and their involvement in meaningful learning. EFL teachers can give learners opportunity to promote three types of engagement through applying visualization and concept mapping as class activities. In addition, the results of the present study may help the textbook writers to include these two techniques in their books as useful tasks to connect the learners to the text, and lead them to interact and communicate with what they listen to. The result of the present study may also be useful for syllabus designers to incorporate innovative and alternative tools and techniques to courses. The results imply that EFL teachers should provide the learners more pre-listening strategies to make listening comprehension more effective and enjoyable.

CONCLUSIONS

Taken together, the findings of the present research highlighted the facilitative role of visualization and concept mapping in learners' engagement and their listening achievement. The study showed if learners use the two listening strategies (visualization and concept mapping), they can make use of the benefits of meaningful and humanistic teaching and learning. It can be concluded that the benefits of applying strategies would make a receptive skill more comprehensible, enhance involvement in learning effectively, and increase students' language achievement. In comparison with the learners in control group, the learners who engaged cognitively, emotionally, and behaviorally during learning process, got higher scores at the end of the term. It was also concluded that using visualization and concept mapping techniques assisted the learners with more comprehension of the text, and enabled them to recall and retain the text more. In EFL contexts, sufficient opportunities to provide the learners with tools and strategies which allow them to reflect on their inner voice and visualize the text as well as techniques which encourage meaningful learning should be made available. Moreover, language teachers should provide learners with different opportunities that can push them toward involvement with the text through using concept maps. The results of the present study also suggest that EFL learners should be fully engaged in process of learning. This is in accordance with the study of Fredricks et al., (2005) that defined academic engagement as a meta- construct comprising behavioral, cognitive and emotional engagement that can have positive effects on comprehension.

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