

## The Impact of Concept Mapping on Iranian EFL Learners' Listening Ability

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### Abstract

The current study investigated the influence of concept mapping on EFL learners' listening comprehension ability. Sixty EFL learners at advanced levels were randomly assigned to experimental (n=30) and control (n=30) groups. The consequences of pretest showed that the members of the two groups were homogenous with regard to their proficiency level and listening ability. The experimental group was instructed to construct concept maps after listening each text and formulated the required post-listening activities on the basis of the constructed maps. Then, the results were analyzed by using T-test, and showed that listening performance can be improved through the utilization of concept mapping strategy.

**Keywords:** concept mapping, listening ability, EFL learners

### INTRODUCTION

Listening can be seen as a fundamental ability in language learning. One of the essential needs of students is to learn to listen and comprehend for communication. Learning how to listen unquestionably helps learners to use this skill as a source of getting information. Listening, according to Brown (2007), is "a major component in language teaching and learning" (p.247).

Listening is a highly dynamic cooperation between an audience and the speaker. Rost (1994, pp. 141-142) states that listening is vital in language classrooms since it provides learners with input. Nunan (2002) emphasizes the importance of adequate input when he writes "without understanding input at the right level, any learning simply cannot begin" (p. 239).

A definitive objective on the listening is comprehension. One of the real methods to make a scaffold amongst listening and learners' experiences is called concept mapping which can successfully be used in pre-listening stage of teaching listening comprehension. Concept maps are graphical/spatial portrayals of information. They

encourage comprehension of the relationship between thoughts by means of making a visual guide of associations. They are composed of concepts, enclosed in circles/boxes, and connecting lines showing the relationship between these concepts (Cañas et.al, 2004).

As Novak & Cañas (2010) present, concept mapping was produced as a reaction to the need by Novak's research group at Cornell University in the early 1970's to locate a superior approach to represent children's conceptual understandings, as part of a 12-year longitudinal study following a 2-year instructional period using audio-tutorial instruction in grades one and two.

In other words, concept map is a method for envisioning the relationship among different concepts. Coffey, Carnot, et al. (2003) mention that concept maps have been shown to be a viable method for speaking to and imparting information. When concepts and linking words are carefully chosen, these maps can be valuable classroom apparatuses for observing nuances of meaning, helping students sort out their reasoning, and condensing subjects of study.

Concept mapping can be utilized for various purposes. Plotnik (1997) called attention to a few purposes for utilizing concept maps:

- Concept maps help to generate ideas.
- Concept maps aid at designing complex structures (long text, hyper media, and large web sites)
- Concept maps are helpful in learning by explicitly integrating new and old knowledge.
- Concept maps can be used as a means of assessing understanding or diagnosing misunderstanding.
- Concept maps can be used for note-taking and summarizing.
- Concept maps are helpful tools in encouraging students to learn meaningfully.
- Concept maps can aid students to gain knowledge about how to learn (metacognitive strategy)
- Concept maps can be used as a pre-writing task to brainstorm ideas and plan a good piece of writing. (p. 136 )

Coffey, et al (2003) mention that concept maps can be useful for following reasons:

- As a scaffold for understanding
- For construction of educational experiences
- To improve affective condition for learning
- As an aid or alternative to traditional writing and listening
- As a mediating representation (p. 95 )

## HOW TO CONSTRUCT CONCEPT MAPS

Distinctive techniques can be utilized for developing concept maps. The strategy that is utilized relies on the reason for map construction" (Novak & Cañas, 2006). Concept maps can be drawn by hand or by the use of concept mapping software. Novak & Gowin (1984) proposed a standard technique for map construction. This technique includes distinctive steps as follows ( as cited in Novak & Cañas, 2003)

1. Define the topic or focus question. Concept Maps that attempt to cover more than one question may become difficult to manage and read.
2. Once the key topic has been defined, the next step is to identify and list the most important or "general" concepts that are associated with that topic.
3. Next, those concepts are ordered top to bottom in the mapping field, going from most general and inclusive to the most specific, an action that fosters the explicit representation of subsumption relationships (i.e., a hierarchical arrangement or morphology).
4. Once the key concepts have been identified and ordered, links are added to form a preliminary Concept Map.
5. Linking phrases are added to describe the relationships among concepts.
6. Once the preliminary Concept Map has been built, a next step is to look for cross links, which link together concepts that are in different areas or sub-domains on the map. Cross-links help to elaborate how concepts are interrelated.
7. Finally, the map is reviewed and any necessary changes to structure or content are made.

## RESEARCH QUESTIONS

The present study aims to answer the following question:

- Does using concept map have any effect on Iranian advanced EFL learners listening comprehension?

## METHOD

### Participants

In order to conduct the present study, the researcher chose 60 male and female Iranian English as Foreign Language (EFL) learners who participated in advanced English classes in Pardisan language institute in Rasht. The participants' ages were 20 to 34. The participants' level of proficiency was advanced according to the TOEFL (PBT) test. The impact of gender and age was excluded from the analysis, and all participants in this study shared the same mother tongue.

The researcher asked the teachers not to inform the students of the goal of the study. Information about the use of the results in a research project was withheld from the participants to avoid negative feelings associated with being used as subjects of experiments.

### **Instrumentation**

In order to have homogeneous participants, the researcher utilized the standardized Longman TOEFL (PBT) test which includes 50 items to measure learners' listening skill. Due to lack of time the researcher only utilized the listening section of the TOEFL test. The test was chosen from the "TOEFL test strategies" by Longman (2004). The test includes three parts. The first part includes 15 multiple choice questions. In this part the participants listened to short conversations between two speakers and the questions about what the first two speakers said asked by a third speaker. Part B of the test consists of 8 multiple choice questions. In this part the participants heard longer conversations and their following questions and chose the correct answer for each question. The last part of the test had 12 multiple choice questions. The participants listened to short lectures and extended conversations and at the end of each they heard several questions and checked the correct answers for each question. The time assigned for the test was 50 minutes.

### **Procedure**

In order to conduct the present study, the researcher administered the TOEFL listening test among 85 Iranian EFL learners in Pardisan language institute in Rasht. Since TOEFL test is a time consuming test, the researcher only utilized the listening section of this test to measure learners' proficiency level. It took 50 minutes for the participants to answer the TOEFL listening test questions. The researcher selected those learners who scored above 27 out of 35 as the participants of the present study. 60 learners out of 85 could obtain the desired result and the rest of the learners were excluded from the study.

The treatment of experimental and control group took 7 sessions. Each session was 90 minutes. The researcher used specific listening activities from the learners' course book that is American English Files 4, and utilized concept mapping technique during their course as treatment for the learners in experimental group. The learners in control group did not receive any concept mapping treatment, and they were only exposed to the listening activities during the course.

### **Data Analysis**

After administering a pre-test and a post-test, the results were analyzed. An independent t-test was run to compare the experimental and control groups' listening knowledge and the level of their listening comprehension ability before teaching Concept mapping strategies to the former group.

## RESULTS AND DISCUSSION

Since the prerequisite for using any parametric inferential statistics is meeting its assumptions, the Kolmogorov-Smirnov test was used for checking normally distributed assumption. The results are indicated in table 1.

**Table 1.** Tests of Normality

	Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Pretest control	.180	29	.015	.945	30	.123
Posttest control	.142	29	.129	.918	30	.024
Pretest experimental	.146	29	.101	.948	30	.151
Posttest experimental	.178	29	.016	.951	30	.175

a. Lilliefors Significance Correction

As the results in table 1 shows the sig level of the Kolmogorov Smirnov across all groups is greater than the research confidence interval (0.05) meaning that there is no concern for normality. Another assumption that should be met in t-test is homogeneity of variances. To answer the homogeneity of variances concern, instead of this test makes sure that there is no preexisting difference across groups so any differences in students' performance after treatment can be attributed to the independent variable which in this study is concept mapping. So the pretest scores across 2 groups (pretest of control and pretest of experimental groups) were tested to see if variances are equal and there is no preexisting difference. The results are indicated in Table 2.

**Table 2.** Test of Homogeneity of Variances

Levene Statistic	df1	df2	Sig.
3.934	1	58	.052

As the table indicates, the sig level of the test (0.52) is greater than the research confidence interval (0.05) meaning that the variance in pretests across groups are equal and there is no preexisting difference in the groups so any difference in the posttest can be attributed to the treatments.

To analyze the performance differences in the control group, a paired sample t-test was used. The reason why the paired samples t-test was used is that students from the same group were measured twice in pretest and post test phase. The descriptive statistics is indicated in table 3 and the results of paired samples t- test are indicated in table 4.

**Table 3.** Paired Samples Statistics

		Mean	N	Std. Deviation
Pair 1	Pretest control	53.33	30	12.57
	Post-test control	53.03	30	13.16

**Table 4.** Paired Samples Test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pretest control – posttestcontrol	.30000	4.25198	.77630	-1.28771	1.88771	.386	29	.702

As the results of paired sample t-tests in table 4 indicate, the sig level of the test (0.702) is greater than the research confidence interval (0.005) which means that in control group participants' degree of listening comprehension was not changed from pre- test to post- test as the result of placebo. By recalling table 3 and mean comparison of pretest (53.33) and post-test (53.03), the researcher confirmed that participants performed better in post -test.

To study the impact of concept mapping on listening comprehension in experimental group, another paired sample t-test was conducted. The results of this analysis are presented in table 5 and table 6.

**Table 5.** Paired Samples Statistics on the effect of concept mapping on listening comprehension

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pretest experimental	52.90	30	9.45	1.73
	Post- test experimental	66.70	30	7.57	1.38

**Table 6.** Paired Samples Test on the effect of concept mapping on listening comprehension

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pretest experimental – postexperimental	-13.80	8.28959	1.51346	-16.89538	-10.70462	-9.118	29	.000

As the results of paired sample t-test indicate the sig level of the test (0.000) is smaller than the research confidence interval (0.05) which means that the null hypothesis which says that the concept mapping has no effect on listening comprehension is rejected and the alternative hypothesis is accepted which confirms that the effect of concept mapping on listening comprehension.

## CONCLUSION

The present study set out to examine the impact of concept mapping as a listening activity on the Iranian learners' listening comprehension. The findings obtained through the analysis of the data gathered through post-test revealed that there was a significant

difference between the participants' post-test experimental groups' scores, implying the significant impact of concept mapping as a listening activity on the Iranian learners' listening comprehension. The results indicated that concept mapping positively and significantly influenced listening comprehension. In other words, the integration of concept mapping to EFL classes tends to foster learners' comprehension of listening.

In essence, the yielded results of the present study lead to this conclusion that concept mapping fosters Iranian EFL learners' listening ability in English classes.

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