An Exploratory Study of the Effective Mediating Artefacts in Listening through Systemic Theoretical Instruction (STI) among English as Foreign Language Learners

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Abstract

This research study investigated the development of listening proficiency level by the aid of different mediational artifacts in Systemic Theoretical Instruction (STI). The study considered whether exposing learners to different types and various numbers of mediating artefacts would increase their awareness towards listening concepts after two months, and consequently promote their listening performance. To this end, 90 undergraduate English as Foreign Language (EFL) Learners, in the field of English Literature and Translation, were recruited in this study. The participants were divided into three experimental groups. The learners in group (I, STI-EM) were exposed to teacher's oral explanation of the listening concepts along with materialized tools , which consisted of presenting the listening concepts in charts and images, while group (II, STI-EV) learners were exposed to teacher's oral explanation of the target concepts and learners' individual form of verbalization. Learners in group (III, STI-EMV) exposed to all forms of mediation such as teacher's oral explanation, materialized tools and learners' verbalization practice. Data were gathered through two listening comprehension tests (pre & post) from learners. Semi-structured interview was then conducted to gain learners' opinions about this way of instruction. The study lasted 13 weeks, including both listening assessments and the enrichment program (EP). The result of the study indicated that learners' listening improvement was detected more in the group who exposed to all forms of mediating artifacts (Group III). While the other two groups (I & II) had approximately the same listening performance. In addition, almost all the learners in three instructional groups were satisfied with STI.

Keywords: Internalization, Listening concept, Materialization, Mediating artefacts, Verbalization.

INTRODUCTION

Mediation is considered as a central concept in the socio-cultural framework. According to Lantolf and Johnson (2007) "the human mind is formed on the basis of the mediation provided by

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concepts, artifacts, and speech" (p. 882). Mediation in Socio-cultural Theory (SCT) is considered as a pedagogical instrument to help language learners overcome their learning problems (Poehner & Lantolf, 2010). Poehner and Lantolf emphasize that mediation offers help and assistance only if the form of the assistance is appro-

priate. As a result, instructing or mediating learners to to overcome their difficulties and later their development is highly emphasized in Vygotskian paradigm (Vygotsky, 1986). Lantolf and Throne (2006), also, define artefact as "psychological tools, or what are often referred to as artifacts, include various kinds of human constructions: numbers, charts, figures, art, music, and the most powerful and pervasive artifact of all, language" (p. 26).

On the other hand, the growing emphasis on the role of listening in both academic and social settings (Flowerdew & Miller, 2005; Goh, 2014; Vandergrift, 2007), and learners' complaints about the demanding nature of this skill (Graham, 2003; Hasan, 2000), can lead to the essentiality of mediating second language (L2) learners to listen effectively with the goal to bringing about development in their listening performance. Vandergrift (2007) believes lack of efficient teaching technique for listening comprehension is responsible for learners' difficulty in this area. Since in most of the listening activities, learners are expected to complete all the related tasks without any help or mediation (Vandergrift & Goh, 2012) and only learners' performance and success is the main concern (Vandergrift, 2007). Hence, there is no information about the reasons or processes underlying learners' performance during listening to a text such as applying effective strategies, being conscious about spoken concepts, for instance, understanding the phonological changes, gap fillers, organization of aural texts, etc.

Furthermore, the findings of some studies revealed that learners' mere exposure to authentic input is not adequate for their language proficiency (Lantolf & Throne, 2006; Swain, 2000). Researchers theoretically and empirically justified that pedagogical intervention and mediation based on explicit instruction in the form of conceptual presentation of language is necessary to promote learners' control over specific categories (Lai, 2012; Lee, 2012; Negueruela & Lantolf, 2006; Van Compernolle, 2012). However, no empirical evidence has been provided to determine the optimal model of mediation in teaching listening. Therefore, the paucity of research on

the comparative effect of different mediating artifacts on listening comprehension and listening performance inspired the conduction of the present research. The present study, therefore, was conducted to investigate the comparative effect of three mediating artifacts on enhancing Iranian EFL learners' listening comprehension.

Teaching Listening with Mediating Artefacts
Aponte-de-Hanna (2012) believes that nowadays teaching listening in the class resembles testing or evaluating listening and teachers usually correct the answer (product) of the related questions. In testing (product-oriented) approach learners are discriminated from one another, while in the view of teaching listening, some attempts are made to support learners in doing specific tasks and paving the way for performing future tasks (Brown, 2011). However, there is lack of consistency among language teachers in how listening should be taught (Graham, Santos & Vanderplank, 2011). Graham (2006) considers that in many language classrooms listening features are considered as an activity rather than a skill to be taught and practiced. Hence, some means of mediation is essential for teaching listening in the ESL/ EFL classrooms.

Haywood and Lidz (2007) explain that "mediation is what good teachers and parents do when they promote high levels of mental functioning in their children and leaners" (p. 42).van Compernolle (2012) identified three broad categories of mediating means or artefacts as tools and signs, concepts, and activities. He emphasized that these mediating artifacts do not function independently of one another; they function as an integration, though. Poehner (2008) points out mediation causes qualitative transformation in one's mental functioning and results in the development of conceptual understanding. Besides, Vygotsky (1978) illustrates the indirect (mediational tools) relationship between subject and object in the form of a triangle (Figure 1) and emphasizes the mediatory role of tools and signs. On the top of the triangle the mediating means is located.
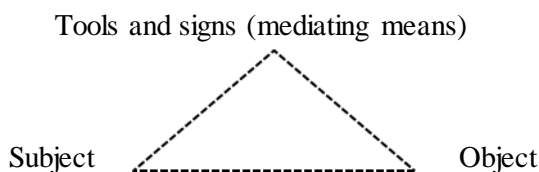
Tools and signs (mediating means)

Subject   Object

Figure 1. Vygotsky's mediation triangle, adopted from Vygotsky (1978, p. 40)

From Vygotskian point of view, learning is a social and collaborative endeavor in which both "expert" and "novice" takes part in a shared, goal-oriented activity. The social speech that takes place between the expert and novice allows for internalization, which is the essence of development (Knouzi et al., 2010). As a result, from a sociocultural theory perspective, the goal of education is guiding students to internalize scientific concepts (Vygotsky & Rieber, 1987). Systemic Theoretical Instruction (STI) is one way of instruction which provides opportunities for the learners to practice and apply the concepts with awareness and intention until they become skillful at employing the concepts. This pedagogical model was proposed by Gal'perin (1989). According to Garcia Frazier (2013), it is systemic because the student is supported by the step by step cognitive assistance, in the form of a map, graph or chart as learning tools to orient learner's performance. It is theoretical because the cognitive tool provided to the student includes the sequential theoretical knowledge needed in a teaching unit of study. In this way, explanation of the concept, materialization, and verbalization are the main tenets of instruction, which try to explicitly mediate the learning process.

Systemic Theoretical Instruction (STI)
STI is alternatively referred to Concept-Based Instruction (CBI). It is a systemic structured instruction that begins with explicit presentation of conceptual knowledge and terminates with internalization (automatization). This way of instruction holds the following core tenets: (a) concepts are the minimal units of instruction (Negueruela, 2003), (b) concepts are presented verbally (speech or written), (c) concepts are modeled imagistically termed as SCOBA (Scheme for Ori-

enting Basis of Action). (d) learners' verbalization in the form of oral (e.g. White, 2012) or written explanation (e.g. Lee, 2012) of the concepts, and (e) internalizing the target concepts.

In this way, a SCOBA can be "the intended output, the pattern or model, means, objects, rules of action and the orienting chart" (Lee, 2012, p. 21). Materialized objects can be in different forms and also can be developed by the teacher (e.g. Lapkin et al., 2008) and learners will expose to prefabricated tools. On the other hand, learners can also develop and construct SCOBAs themselves during the process of instruction like the studies which conducted by Serrano-Lopez and Poehner (2008) and Ferreira and Lantolf (2008).

Speech is proved to mediate thought and this mediation may occur through different forms such as collaborative speech among learners (e.g. Swain & Lapkin, 2002), speech between learner and expert (e.g. Aljaafreh and Lantolf 1994), or the private speech of individual learners (e.g. DiCamilla & Anton 2004). Speech is accepted to mediate learning and leads learners to gain self-regulation. Through the use of language, learners purposefully organize and control their mental processes while performing a complex task (Knouzi et al., 2010).

The mediating artefacts and instructions in all stages should give rise to the last stage, that is, internalizing all theoretical concepts, the process by which "a person moves from object or other-regulation to self-regulation" (Ellis, 2008, p. 968). Stafford (2013) believes that internalization is a fundamental stage in which knowledge is grown through interpersonal interaction and made this knowledge available during independent activities.

Research Questions
The primary goal of this study was to investigate

the optimal forms and types of mediating arte-facts in Systemic-Theoretical Instruction (STI) on promoting the listening comprehension in a for-eign language context. This goal was realized throughout the following research questions:

(1) *Type of mediating artifacts in listening:* Which of the following mediating forms (STI-EMV, STI-EM, and STI- EV) is the optimal method of mediation to promote learners' listening performance?

(2) *Reflection*: What are learners' feedback towards this way of instruction in different instructional groups?

Methods

Table 1
Group arrangement in the study

	Group Name	Mediating Type	Number of Mediating Artefacts	Number of Participants
1	STI-EM	• Teacher's oral explanation • Materialized objects	2	30
2	STI-EV	✓ Teacher's oral explanation ✓ Practicing verbalization (self)	2	30
3	STI-EMV	➢ Teacher's oral explanation ➢ Materialized object ➢ Practicing verbalization (self)	3	30

Learners were divided into one level of lan-guage proficiency-intermediate based on their scores in listening part of Oxford Placement Test (OPT). The mean obtained was 67.8 and the SD was 10. Those who scored one SD above and one SD below the mean were included in the study.

Group arrangement in this study was based on the type and quantity of mediating artifacts in STI. As an example, one group (STI-EMV) fol-lowed all phases and received three forms of me-diation during instruction. The other two groups, however, received two mediating artifacts, such as one sole exposure to materialized objects (STI-EM) and the other to verbalization practice (STI-EV). The other possible arrangement was consid-ered as (STI-MV). it means that learners were exposed to materialized objects and practicing verbalization. This arrangement was not included in the study since in all three groups (STI, EMV, STI-EV, and STI-EM), teacher's oral explanation

Participants

To fulfil the purpose of the study, that is, to in-vestigate the efficacy of three models of media-tional artifacts in enhancing the learners' listen-ing comprehension performance, 90 EFL stu-dents (59 females, 31males) drawn from an initial pool of 106 in three intact classes participated in this study. The classes were thus randomly as-signed to three different instructional groups. The differences among groups were related to number and kind of mediating artefacts they expose to during their listening instruction. Table 1 summa-rizes the group arrangement in the study.

was included as the primary mediating artifacts. The group arrangement of materialized objects and verbalization practice was excluded since the researcher did not wish the experimental group to expose to a less effective teaching practice.

However, it should be noted that the stages of STI for the group (STI-EMV) in this study, was based on Negueruela's (2003) and Yanez-Prieto's (2008) model. As an example, in Negueruela's study, three main tenets of STI were considered as follow: finding a unit of instruction that pro-vides a complete orientation for the subject mat-ter, materialization of that unit of instruction through didactic aids, and using verbalizations for internalizing the focused concepts. Negue-ruela (2003) analyzed three sets of data as defi-nition, discourse and verbalization before and after instruction from twelve college students enrolled in an advanced level Spanish language class. In the mentioned study, the improvement

of learners was traced in one experimental group. In addition, emphasizing the stage of materialization for the second group (STI-EM) was in line with the study which was conducted by Serrano-Lopez and Poehner (2008) that the stage of verbalization was highlighted. On the other hand, the arrangement of other experimental group (STI-EV) was followed by the study which was carried out by Ganem-Gutierrez (2008); and Harun, Massari and Behak (2014) that the role of verbalization was highly emphasized for the learners' improvement. Ganem-Gutierrez (2008) showed that dialogue or verbalization had positive effects on learners' grammatical structure.

Instruments

The instruments , which were used in this study can be labeled as measurement instruments.

Measurement instruments

To measure development of the students' listening, a pre-test, post-test was conducted. In addition, one listening test was used for screening and selecting of the participants. The structure of each instrument and the rationale behind using them are described below.

a) Placement listening test. Before the participants are exposed to instruction, the standard Oxford Placement Test (OPT) listening part was used for selecting the required participants. In the current study, the estimate of reliability for the test was 0.80 as estimated by Cronbach's Alpha.

b) Preliminary test of English listening part. A test of language proficiency, a Preliminary English Test (PET) listening part, was used to assess and compare students' listening performance both in pre and post-test. PET is an exam at Threshold level (B1) of the Council of Europe's Common Framework and is aimed at those who can deal with a range of spoken materials including announcements and discussions about everyday life. In the present study, the Cronbach alpha coefficient for pre and post-tests were 0.71and 0.61, respectively.

c) Semi-structured Interviews. In particular, the interviews were carried out to achieve the following purposes: (a) to get an insight into the students' overall evaluation regarding this way of teaching listening (STI), (b) to compare students' overall evaluations in three different groups of study, and (c) to gain a better perception of the type of activities students prefer during instruction. Interviews took place in the last session of instruction and only volunteers participated in this part of the study.

Instructional materials

Some other materials were also gathered and devised in this study such as instructional unit and SCOBAs.

Instructional Units. The listening lessons had a number of features common to the three groups and a few features that were specific to each group. The listening practice tasks were common to all three groups. The listening concepts for each instructional unit were selected based on Buck's (2003), and Goh's (2014) model. The concepts of the units are as follow: 1) phonological knowledge, (2) grammatical knowledge (3) vocabulary knowledge, (4) discourse knowledge, and (5) pragmatic knowledge. Each instructional unit had the ranges of 6 to 8 exercises for sufficient opportunities of practicing. The aim of developing instructional units was providing opportunities for learners in order to detect concepts and practice verbalization. The instructional units had the following parts:

a) SCOBAs. In this study, SCOBAs were developed into two forms. The first one is presented by the power point in a complete form and the second form is presented on a paper in an incomplete form that learners themselves had to complete. Each complete form of SCOBA had the common features in all listening concepts. All of them had three parts such as the short explanation of the target concept, providing examples, and finally explanation of the related strategy to extract the knowledge. In other words, SCOBAs included both the listening concepts and the concept corresponded strategy and examples. According to Buck (2003), to make use of able to use language competence, applying strategic

competence is necessary, only two instructional groups STI-EM and STI-EMV were exposed to mediating tools. The rationale for using incomplete form of SCOBA is, involving students more in the process of learning. It should be noted that each instructional unit was focused on one concept, but it included various topics of oral texts such as food, sightseeing, university, etc.

The different parts of the unit 1, which was about the concept of phonology has been explained in the following paragraphs.

Unit 1- phonology

The prosodic features of English language play an important role in its comprehension since English is a stress-timed language (Brown, 2001). According to Mendelsohn (1994), mastery of the features of the sound system at the sentence and discourse level is required for learners to handle listening comprehension. To Ableeva (2010), learners may know the word in listening but fail to recognize it in the connected discourse due to its phonetic quality (e.g. unstressed words, assimilation, and varying speed of the speech stream). In addition, L2 listeners tend to segment on the basis of their L1 segmentation process (Cutler, 2001). Accordingly, learners were trained in understanding the importance of word stress and primary sentence stress in unit one, perceiving the differences in intonation in unit two, and recognizing features of fast speech such as elision, reduction, linking, and assimilation in unit 3.

The instructed concept in unit one: Word stress and sentence stress

Iranian EFL learners have not been used to hearing speech in which some syllables are given more stress than others; they expect to hear every word with equal stress. As a result, some key information about the role of stress on a word was given in the charts. It was described that word stress is a magic key to understanding spoken English. In addition, some difficulties of non-native speakers who speak English to native speakers without using word stress were pointed out and some examples were given in the class.

After that, the rules of word stress on syllables and the importance of strong syllables rather than weak ones in listening were taught (*retrieved from www.englishclub.com*). Second, the prominence of stress on important words (key words) in sentence was highlighted. Then, the group of words (verbs, nouns, adjectives, adverbs, numbers, and negative forms like "isn't, don't, and can't) which receive stress for the reason of conveying the most important information was explained. In another part, the group of words in a sentence that are less important such as prepositions, articles, pronouns, forms of the verb "to be", and "or" and respectively their reduced or shortened form of saying were clarified (Tanka & Most, 2007) in detail both orally and by using charts for STI-MI and STI-MVI groups and just oral explanation for STI-VI group.

Concept related strategies: Finding main idea, planning, and having selective attention

In this study, the rules of listening concepts along with the strategies corresponding to the concepts were included to guide the students in extracting the scientific concepts efficiently. Listening for the main idea, according to Lund (1990), involves actual comprehension of the message and is the first aspect of the message that listeners attempt to process. Accordingly, finding the main idea was the first strategy. Learners were taught how to find the main idea of what is being said by focusing on the content words which are the stressed words. The other strategy which is related to this concept is planning. Learners were trained to use selective attention by concentrating on particular aspects or stressed words in a message and ignoring some unimportant parts of the message.

Tasks

All the selected tasks in this part concentrated on word stress and sentence stress from a pool of tasks in various instructional books in the market. In this part, tasks such as underlining stressed words, filling in the blanks of stressed words, completing the table based on word stress, find-

ing mistakes in the table, taking notes of important information, and filling in the blanks of reduced forms were picked.

Flowerdew and Miller (2005) discussed that language teachers should focus not only on the product of listening but also on the process. To make the listening tasks more pleasant, and process-based, three tasks were selected for practicing verbalization. The specifications of the related tasks were: a) finding errors in the table by paying attention to important words (self- verbalization form), b) filling in the blanks of the stressed words in a conversation (self- verbalization), and c) underlining stressed words (self- verbalization). As mentioned earlier verbalizing activity was practiced in two groups (STI-EV & STI-EMV). On the other hand, STI-EM did all the tasks without any verbalizing activity. The verbalizing activities were carried out verbally in class.

b) Assignments. The learners were provided with some researcher-designed listening assignments that only two groups STI-EV and STI-EMV practiced written form of verbalization. This activity for the STI-EM group was done without writing their explanation. On a separate paper, students in two mentioned groups had to write their explanations and reasons. All the written verbalization was collected for more enquiry by the researcher the following session. It is worth noting that all assignments should have been done by the learner's classmates. In addition, by considering the rules of specific concept, students recorded their voice and brought the recorded voice to the class in the next session. All of the assignments were in the form of prepared dialogue, except the assignment for pragmatic part that students themselves had to make a conversation and use appropriate language by considering the relation between interlocutors. Some useful expressions for making the conversation was displayed in the table as a hint. Participants in all three groups had to record their voices, while reading a conversation with their partners by taking into account all the instructed rules. By recording their voice, learners were en-couraged to become more aware of the rules in listening.

Example of assignment for unit 1
Students were asked to listen to a conversation and write the missing words which carried stress but were purposefully deleted from the conversation. Then they were required to read and record the conversation with their partner by observing the rules of key words and stressed words to practice and internalize the specific concepts. The two groups (STI-EV & STI-EMV) verbalized the concepts and this time they had to practice verbalization in a written form. However, the STI-EM only recorded their voice without verbalizing the rules. In the session after instructions, the CD of their voice samples as well as their written verbalization had to be taken to class. Some of the recorded conversations were played for the whole of class and written verbalizations were gathered and commented on by the researcher.

Learners' verbalization (both written & oral) was carried out in the first language (Persian). According to Escandon and Sanz (2011) this stage was like a hypothesis-making in L1 under certain conditions and it is in the service of L2 development. In this vein, L1 use provides learners with "additional cognitive support that allows them to analyze language and work at a higher level than would be possible if they were restricted to the sole use of L2" (Stroch & Wigglesworth, 2003, p. 760).

Procedure
This research study took 13 weeks. This includes listening assessments and enrichment sessions. In week one of the study, the OPT the listening part was administered to all participants. The test results were used to screen and select the students in terms of their listening performance. The PET listening part was then administered to all learners participating in the study to assess their listening ability prior to the intervention. During enrichment sessions, the learners were given training in the target concepts which provided with materialized objects such as charts and tables for

STI-EM and STI-EMV groups along with practicing verbalization for STI-EV and STI-EMV groups. The procedures of conceptual approach toward listening based on the stages followed in STI for one instructional unit (discourse markers) was as follow:

1. Stage one: Orientation towards the target concept

The first step was to offer learners a new way to view long and boring aural texts such as lecture. The concept of discourse markers, i.e., "words or expressions signaling the logical relationship between propositions, or the signals that tell the listeners how the discourse is organized" (Mendelsohn 1994, p. 63) was introduced in an example while learners were listening to a text.

2. Stage two: Oral explanation of the target concept

In this stage, oral explanations about some of the main points of any utterance especially long ones such as lecture were provided for the learners and paid their attention to the signals which were hidden in the texts such as linking words or words for connecting sentences and ideas. Then the teacher explained about understanding the logical relation between the first and second part of an utterance as a hint in understanding the whole statement.

3. Stage tree: Presenting SCOBA in two forms

An example was pulled out from a long lecture and shown imagistically. It was also displayed when learners heard the first part of an utterance for example about the topic of global warming,' and heard the sample sentence "*the main source of global warming is **because of** carbon emission'*, if the linking word 'because of' was identified, they could easily predict the rest of the utterance as well as the organization of the utterance (Tanka & Baker 2004). For example, by recognizing the signals in an aural text, learners can find whether a text is organized based on cause and effect, compare and contrast, or time sequence. In addition, learners were provided with some helpful strategies to detect the concepts in aural texts with ease. As Oxford (1990) points out, notetaking is an important strategy for listening that can be developed at early stages of learning. The learners were instructed on noticing the aspects of message that would help them separate the main ideas and the details. An example was putting the main ideas first and adding the details in the bottom. Students were taught that finding main idea as well as having selective attention are two vital strategies in taking notes. The students were trained how to organize their notes in a way that main ideas and details were easily recognizable by using outline, charts, and tables. They were also instructed on using some common abbreviations and symbols while taking notes. Next, an incomplete format of SCOBA was presented to learners to complete with the instructed points. The sample of incomplete SCOBA is shown in the Appendix. Figure 2 illustrates a schematic representation of linking words.

Figure 2. The schematic presentation of linking word

4. Stage four: Verbalization through tasks

In this part some tasks which were in line with the target concepts were selected for self-verbalization to detect and explain the concept. Various tasks for this part were selected as follows: listening to a description and numbering the pictures by paying attention to sequential adverbs (self-verbalization), categorizing the stages of one speech and then completing some expressions, completing the summarized form of lecture by separating main ideas and details (self-verbalization), listening to a conversation and finding the similarities and differences in their ideas (self-verbalization), and marking the supporting and contrasting ideas.

5. Stage five: Internalization practiced through assignments

In order for the learners to be able to internalize the target concepts, some homework was selected, in which two conversations were given. In the first one, students were asked to complete the conversation by considering the linking words and logical relation of the text. In the second one, some linking words were given, and learners were to fill in the blanks with the appropriate connected speech. What followed was recording their voices for all groups and explaining their logic for choosing the connected word in task 2 and completing the blanks with appropriate words for task 1 in two groups (STI-EV & STI-EMV).

RESULTS

As for the following research question (*Which of the following mediating forms (STI-EMV, STI-EM, and STI, EV) is the optimal form of mediation to promote learners' listening performance?*), a one-way between-groups analysis of covariance was conducted to compare the effectiveness of three different mediating artifacts on listening. The independent variable was the types of intervention (STI-EM, STI-EV, STI-EMV), and the dependent variable consisted of scores on the PET listening part after the intervention.

Participants' scores on the pre-intervention of PET listening test were used as the covariate in this analysis. All the assumptions for running ANCOVA was checked first. The assumption of covariate independency was checked by running ANOVA with pretest scores. The main effect of pretest listening scores was not significant, $F_{(2, 87)} = 2.47$, $p = .09$, which showed that the average of scores was roughly the same in three groups, initially. In other words, the means of learners' score before intervention were not significantly different among three groups. By obtaining this result, it is appropriate to use learners' pretest scores as a covariate in the analysis. The second assumption for running ANCOVA was the homogeneity of regression slopes. It means that the relationship between the outcome (dependent variable) and the covariate is the same for all three experimental conditions. To test the homogeneity of regression slopes the ANCOVA was run by the use of customized model. In the output obtained from the procedure, $p = .56$ which is greater that significant value and indicated that the assumption of homogeneity of regression slopes was not violated.

ANCOVA analysis was run to measure the effect of different ways of mediation on listening performance and finding the optimal way of mediation among the three ones. The following tables showed the results of Levene's test and the ANOVA table 2 by including pretest listening scores in the model as a covariate.

Table 2
Levene's test for listening performance scores

F	Df1	Df2	Sig.
.811	2	87	.448

The result indicated that the homogeneity of variances, the prerequisite condition for running ANOVA with covariate, was not violated because the value obtained was greater than the alpha level of 0.05 ($p = .45 > .05$).

Table 3
ANOVA test by including covariate

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected model	636.865	3	212.288	31.790	.000
Intercept	232.847	1	232.847	34.869	.000
Pretest	636.243	1	636.243	95.277	.000
Group	43.446	2	21.723	3.253	.043
Error	574.290	86	6.678		
Total	26078.000	90			
Corrected total	1211.156	89			

As shown in Table 3, it is clear that the covariate (students' performance in pretest, before receiving any instruction) significantly predicted the dependent variable (students' performance in posttest, after receiving different ways of instruction), because the significant value is greater that 0.05 (*p*=.04). Therefore, the performance of all three groups were not the same. However, checking the adjusted valued of the groups for finding the optimal way of intervention was crucial. The results are presented in Table 4 below.

From these estimates, it could be concluded that the STI-EMV group (the highest group) differs significantly from group 1 (STI-EM & group 2 (STI-EV).

In other words, the mean of group which received all forms of mediating artefacts was higher than the other two groups which received two forms of mediation.

Table 4
Parameters estimate

Group	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
EM	15.972	.484	15.009	16.935
EV	16.179	.480	15.225	17.133
EMV	17.518	.495	16.533	18.503

In addition, among the two forms of mediation (verbalization & materialization), both groups showed approximately the same performance. The result of pairwise comparison among groups is shown in Table 5.

Table 5
Pairwise comparisons of three groups

(I) Group	(J) Group	Mean Differences (I-J)	Std. Error	Sig.	95% Confidence Interval for Difference	
					Lower Bound	Upper Bound
EM	EV	-.153	.667	.819	-1.480	1.173
	EMV	-1.586*	.682	.022	-2.942	-.230
EV	EM	.153	.667	.819	-1.173	1.480
	EMV	-1.433*	.680	.038	-2.785	-.080
EMV	EM	1.586*	.682	.022	.230	2.942
	EV	1.433	.680	.038	-.080	2.785

The result of planned contrast shows that the performance of EMV group in listening was significantly different from the performance of EV and EM groups. Hence, there was no significant difference between the performance of EV and EM groups. It could be concluded that having more mediating artefacts, that is practicing verbalization accompanied with materialized objects significantly increased learners' listening performance compared to learners who were only exposed to materialized objects, and verbalization practice.

As for the second research question (*What are learners' feedback toward this way of instruc-*

tion?), 34 volunteers participated in semi-structured interview sessions. A qualitative content analysis of data was conducted. The following results were gathered among three instructional groups through semi-structured interview.

a)Volunteers' feedback in STI-EM

Almost all the learners were satisfied with the materialized objects. They commented that the organized way of presenting and teaching listening concepts and strategies in charts and tables resulted in their increased awareness and attention, increased interest in listening, reducing their anxiety in listening, listening to different accents with ease, better understanding of fast speech, increased comprehension of rules and then sticking the rules in mind better. To ensure that confidentiality is observed when citing the quotations, each quotation is labeled as follows: Each learner's quotation cited here is presented with *Ln. L* stands for learner, *n* refers to the number assigned to each learner's response. Representative of some learner's idea in STI-EM group were:

> *L12: It was very hard to listen to aural texts with different accent but by this way of instruction my problems in this area partly solved and this contributed greatly to the progress I've made in this skill. Classified educational materials, charts and tables, as criteria for answering questions were really helpful. By this way of teaching listening, accomplishing the listening tasks were not based on just our background information. Now we have a checklist to use it as an aid for accomplishing tasks. My listening comprehension improved and now it is more convenient for me to hear to different accents and speedy speech.*

b) Volunteers' feedback in STI-EMV

The volunteers in this group like the previous group approved the role of materialized objects in their learning. In addition, almost all of them enjoyed verbalization with themselves and their partners while accomplishing listening tasks in and out of the class. Also, they appreciated the voice-recording activity as an out-of-class assignment. They believed that by this activity they referred to rules a lot and checked the consistency of rules and their voices. Here is an example of learner's idea:

> *L11: It was difficult for me to listen to aural texts before knowing these concepts. I didn't know how to listen and what to pay attention to while listening, but the rules changed my views. My awareness in listening improved a lot and I can do listening tasks easier. I enjoyed collaborative conversation with my partner while accomplishing tasks out of class. Definitely, my listening comprehension improved and my capabilities have changed. I 've made a lot of progress.*

c) Volunteers' feedback in STI-EV

The volunteers in this group considered rules explanation accompanied by some related tasks as being really helpful in better aural text comprehension. Moreover, they preferred voice recording activity and collaborative dialogue. Most of the learners in this group emphasized that for better understanding of the related rules, they needed more practice and time. Sample of comment made by the learner is as follow:

> *L13: This way of instruction made the rules stick in our mind better. All the previous listening instructions were summarized in playing, pausing the aural texts and asking learners to recall the information or explain what they 've already listened to. And can be concluded that listening explanations was at the service of grammatical points explanation. There was no clarifications of the rules and reasons behind some phonological processes in spoken language. Now my listening knowledge is really organized and rule-based.*

DISCUSSION AND CONCLUSIONS

In this study, the result of listening performance

in group (STI-EMV), which exposed to all forms of mediations and followed all stages of Gal'perin's study, was significantly higher than the other two groups. The findings of the study weresuggested that there was a significant difference among using STI-EM, STI-EV, and STI-EMV in a systemic theoretical instruction (STI) on EFL leaners' listening comprehension. The findings are consistent with the studies and findings of some language researchers. The results of are also in linewith Fogal (2015), Garcia Frazier (2013), Garcia (2012), Kim (2013), Lia (2012), Lee (2012), Negueruela (2003), in that, Compernolle (2012), and Yanez-Prieto (2008) in that, Concept-based Instruction (CBI) had a positive effect in language development. In all the studies mentioned, the concepts of syntactic structure of aspect, verbal mood, and verbal tense, voice, meaning of phrasal verbs, temporal expressions, sarcasm, and socio-pragmatics are explained explicitly at first, and then some materialized objects accompany the instructor's oral explanation. After that, some tasks for more concept practice and doing verbalization practice were administered to learners.

For more illustration of the stages in STI, one you can refer to a study conducted by Garcia (2012) about teaching Spanish. All the stages and mediating artefacts developed in this study were as follow. The collected data was learners' definition of the grammatical concept of aspect, written performance protocols, and verbalization data recorded during two oral interviews. He followed the same procedure of Neguerela's study with some innovations in verbalization. The verbalization data of the study was collected during learner oral interviews with the instructor in a dynamic assessment (DA) format before and after the pedagogical intervention to determine the learners' potential development in regard to the grammatical concept of aspect in Spanish. As a conclusion, in all studies which were carried out based on STI, the essential factors attributing to learners' improvement and development in the instructed concepts could be related to explicit explanation of target concepts, developing materialized objects either by a teacher or learners,

and verbalization in different forms such as learners' collaborative, self-verbalization, group discussion, and one-on-one teacher and learner interaction. In some studies, the reverse results were seen. Instruction and exposing learners to some new forms of instruction not necessarily showed the positive impact on learners' ability. As an example, Ferreira and Lantolf's (2008) study in which learners did not have a considerable improvement in writing through genre-based approach based on the procedure of STI. They justified this result on learners' resistance to traditional ways of instruction.

Interestingly, learners' performances in the other two groups (STI-EM & STI-EV) were approximately the same. It indicated that materializing artefacts and verbalizing practice both complement the process of learning listening. Although in some previous studies even one artefact skipped from the stages of instruction, STI had a positive effect on concept development. In the following studies conducted by Kabanova (As cited in Lai, 2012) and Serrano-Lopez and Poehner (2008) the verbalization practice was skipped. The results of Kabanova's (1985) study showed that learners understand German sentence structures deeply and also understand general principles of sentence structures of other languages. Moreover, in Serrano-Lopez's study, the results of immediate post-test indicated that groups that received STI outperformed the control group, and on the delayed post-test, the group that had done clay modeling (constructing materialized tool) outperformed the other two groups. The result of the study showed the significant effects of SCOBAs in understanding the concept, especially when materialized objects (SCOBAs) were constructed by the learners. Previous studies indicated that materializing tools had positive role in learning, whereas in this study, (STI-EM) did not have a significant improvement in listening performance. The result of (STI-EM) was in line with Ferreira and Lantolf's (2008) study in which learners did not have a considerable improvement in writing through genre-based approach based on the procedure of STI.

Also, previous studies suggested the importance of verbalization or collaborative verbalization as a mediating tool to construct meaning and learning opportunities. Harun, Massari, and Behak (2014) claimed the effective use of L1 as a mediating tool for understanding tense and aspect marking in English. However, the results gained from (ST-EV) group showed that verbalization practice could not be as effective as a materialized model is required to couple with verbalization practice. The results obtained from this group proved what Gal'perin (1992) believed about effective role of teachers' guidance in a situation accompanied by symbolic and graphic representations or -Scheme of a Complete Orienting Basis of an Action- (SCOBA).

The study probed into the efficacy of different mediating artefacts in enhancing learners' theoretical listening concept understanding and hence their improvement in listening performance. The results showed that exposing learners to all forms of mediating artefacts brought about positive outcome as far as the learners' performance on a PET listening part was concerned. The results also showed that the group which practiced verbalization and the group which was only exposed to the materialized objects had approximately the same listening performance. In conclusion, the findings of this study can make language educators aware of the importance of using different forms of mediating artefacts for instruction. Also, it can be noted that verbalization practice in first language (L1) in the context of L2 learning could be a helpful tool to regulate learners' conceptual understanding although in some English language schools learners are not allowed to use even a word in (L1).

Moreover, the results obtained from the present study lead us to recommend that experiencing the materialized objects in addition to spoken language play a considerable role in internalizing new concepts. Therefore, it makes sense to include some concept representation in textbooks or make some opportunities for learners to develop materializing tools. These activities encourage learners' motivation and autonomy. Furthermore, some more tasks can be developed during which learn-

ers detect, identify, and explain the target concepts in pairs or groups for practicing verbalization. In the case when target concepts are presented in different forms (orally and imagistically) and involve learners in developing SCOBAs, the learning styles of all learners in class could be observed.

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