



EFL Learners' Perspective on Listening Comprehension Development: Cognitive or Metacognitive Scaffolding Strategies

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Abstract

Drawing on investigations conducted on the relative adequacy of the various types of scaffolding strategies in SL/FL learning, this study investigated the relative efficacy of “formal practice” as a cognitive scaffolding strategy, “reflection and monitoring” as metacognitive scaffolding strategies, and “note-taking” as a cognitive non-scaffolding strategy for the EFL learners’ listening comprehension development. To this aim, a total of 90 EFL students from two different language institutes in Dorood (Lorestan province, central Iran) were chosen using convenience sampling procedure. The sample was conveniently assigned into three groups of 30 EFL learners and the relevant treatments were given to the groups for 15 sessions. The statistical analyses indicated that reflection and monitoring metacognitive scaffolding strategies significantly enhanced the listening comprehension development of EFL learners. As for the qualitative phase, the most frequent types of cognitive and metacognitive scaffolding strategies applied by the peers and teachers were explored through a semi-structured interview. The content analysis of the interview data indicated that the learners and teachers found reflection and monitoring scaffolding strategies as the most frequently used and effective procedures. An implication of the findings might be that in comparison to cognitive scaffolding and non-scaffolding strategies, metacognitive scaffolding strategies are empirically verified and attitudinally confirmed to be quite efficacious for the development of listening comprehension among EFL learners in an emotionally positive and constructive atmosphere.

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Introduction

Second language (L2) development theorists and educators have long been preoccupied with conceptualization of the basic concepts of Vygotskian sociocultural theory (SCT) including scaffolding, Zone of Proximal Development (ZPD), and mediation (Mitchell & Myles, 2004) and attempts are made to operationalize such concepts. Johnson (2019), for instance, holds that scaffolding is a pedagogical interpretation of Vygotsky's notion of ZPD, which comprises different sorts of assistance provided by an educator for the purpose of accomplishment of a demanding assignment by the learners. From another perspective, Gibbons (2015) adopts a less practical stance and views scaffolding generally as a unique support provided by educators in the process of learning and more specifically as a sort of tailored support given to students to fulfil their learning goals (Gibbons, 2015). From a more assessment-oriented perspective, Yusnida et al. (2017) define scaffolding as an ongoing diagnostic assessment that occurs informally as students enter into a task like listening comprehension.

In the field of second or foreign language education, the existing literature has substantially documented the efficacy of scaffolding over non-scaffolding procedures (e.g., Ahmadi Safa & Rozati, 2017; Ahmadi Safa & Mottaghi, 2024); however, the relative effectiveness of various scaffolding procedures for the foreign or second language skills development has not received due attention. On the other hand, given that the application of scaffolding requires the teachers to be cognizant of the framework concerning the acquisition of language skills, the most efficient processes for the development of the language abilities, and the learners' level of proficiency (Talebinejad & Akhgar, 2015), the role of strategy training for optimum scaffolding has been especially emphasized for the development of SL/FL learners' listening comprehension (Moghadam et al., 2016).

Similarly, the investigations of the relative effectiveness of cognitive versus metacognitive scaffolding strategies in developing listening comprehension have only recently come to the forefront of educational research. Considering the significance of this issue, the researchers have called for more empirical investigations in this regard (Kök, 2017; Moghadam et al., 2016). As a partial attempt to address this call, the present investigation focused on the efficacy of formal practice as a cognitive scaffolding procedure, and reflection and monitoring as metacognitive scaffolding procedures for the EFL learners' listening comprehension development.

Review of the Related Literature

Sociocultural Theory (SCT) delineates into the embedded processes involved in social interactions of individuals with the people and environment in their course of development (Lantolf & Thorne, 2006). Major constructs of SCT like Zone of Proximal Development (ZPD), mediation, scaffolding, and regulation are constructed in the heart of such interactions. Scaffolding as a vital facet of development course that distinguishes the support from adults or collaboration among peers is characterized as a dynamic interaction which leads to the reduction of the complexity of the assignment, maintenance of the concentration of the learners, facilitation of task completion for the learners, and encouragement of the learners to assume responsibility for the task at hand (Poehner & Infante, 2016). Johnson (2019) maintains that individuals who engage in social, collaborative and interactive activities show higher mental

functions and cognitive development. Such activities demand communicative engagement of the peers and educators during learning process (Shabani & Malekdar, 2016). Wolf et al. (2016) maintained that the primary intentions behind scaffolding strategies are to provide background knowledge and adopt metacognitive strategies in order for the students to be able to accomplish a task or achieve a learning objective.

Concerning the attested metacognitive strategies, Flavell (1979) postulates that a higher-order process is required for any cognitive development to start the action, adjust to a specific level of cognitive function, and assess the output of the task. The named procedures embody 'metacognition'. Metacognition is characterized as reflection on the process of cognition and a sort of advanced cognitive process.

Research across various educational settings has demonstrated that cognitive scaffolding strategies facilitate the construction and connection of ideas for the learners, thereby empowering them to respond to inquiries and complete tasks that would otherwise be beyond their capabilities without scaffolding (Mackiewicz & Thompson, 2014). Metacognitive scaffolding procedures have also been invoked to raise a finest intra-group social metacognitive interaction (Molenaar et al., 2014) and enhance the awareness of the learners of their individual knowledge and proficiency (Channa et al., 2018). Torrisi (2018) suggested that to develop metacognition, the implementation of effective metacognitive scaffolding is essential. In addition, the provision of external support to enhance metacognitive awareness while problem solving is quite essential for the learners.

Aiming at the development of EFL learners' listening comprehension development, Ghafar Samar and Dehqan (2012) claimed that listening comprehension has already shifted from traditional perspective to an integrative one in which listening is considered as an interpersonal competence where active participation and interaction among learners are required. Hence, the activities for the development of listening comprehension in classrooms need to stimulate the learners to share ideas and have interaction. They need to engage in interactive listening comprehension exercises and demonstrate their understanding of the material they listen to (Anderson, 2015). Vandergrift (2004) and Goh (2008) integrated metacognitive instruction into listening comprehension development and believed that metacognitive instruction can possibly enhance the learners' awareness of their listening and learning processes and elevate their capability of using proper procedures in various contexts.

The application of cognitive and metacognitive processes for scaffolding purpose is a rather recent educational undertaking (Ahmadi Safa & Mottaghi, 2024) among educational researchers. Ahmadi Safa and Rozati (2017) for one investigated the influence of scaffolding and non-scaffolding procedures on the advancement of listening comprehension among EFL learners and concluded that the impact of scaffolding provided by both experts and co-equal peers were superior for the improvement of the learners' listening comprehension compared to non-scaffolding strategies. Ahmadi Safa and Mottaghi (2024) also confirmed that metacognitive scaffolding procedures significantly contributed to the advancement of listening comprehension among EFL learners compared to cognitive scaffolding procedures and non-scaffolding instruction. Moreover, EFL learners expressed a significantly higher level of

satisfaction with the metacognitive scaffolding procedures and considered them effective for the purpose of instruction, innovation, more desirable comprehension and elevated readiness.

Wang (2015) applied a metacognitive pedagogical cycle to Chinese EFL learners and confirmed that the pedagogical cycle was positively effective for the development of listening proficiency and metacognitive knowledge of the EFL learners. Wang added that self-regulated learning of the language learners was developed through the application of metacognitive, cognitive, and socio-affective procedures. From another vantage point, Moghadam et al. (2016) explored the typology and frequency of strategies (cognitive, metacognitive, or affective) that university EFL learners apply in their listening comprehension process. The results showed that cognitive and metacognitive procedures were employed more than socio-affective procedures in their listening sessions. Similarly, Dimassi (2016) examined the educational efficiency of cognitive strategy-based instruction method (CSBM) and metacognitive strategy-based instruction method (MetSBM) and the results indicated that MetSBM method demonstrated greater efficacy compared to CSBM and was more productive in the improvement of students' listening comprehension.

In a second language learning context, Sok and Shin (2021) investigated the roles of two cognitive factors, namely aptitude and metacognitive awareness, in the listening comprehension abilities development of Native-Korean learners of a second language. Additionally, the study tested if metacognitive awareness served as a mediator in the relationship between aptitude and second language listening comprehension. The results showed that there was a positive correlation between both aptitude and metacognitive awareness with second language listening comprehension. Moreover, the relationship between aptitude and L2 listening comprehension was mediated through metacognitive awareness. The results also indicated that the influence of cognitive learner variables on second language listening comprehension was substantial and interdependent.

Finally, Bozorgian et al. (2020) examined the effects of metacognitive intervention on both listening performance and metacognitive awareness and with this mind they administered the VDS test to EFL learners who had limited capacity of working memory. The metacognitive intervention was applied to an experimental group via a ten-session pedagogical cycle; however, a traditional approach was applied to the control group. The findings indicated that the experimental group demonstrated a more significant improvement in listening performance compared to the control group.

Against the depicted backdrop and given that the investigations concentrating on the effects of different cognitive and metacognitive activities, various scaffolding techniques and specific metacognitive scaffolding procedures on certain aspects of foreign or second language development have been relatively scant and only limited number of studies were found to examine the comparative effects of formal practice as a primarily cognitive strategy, and reflection and monitoring metacognitive scaffolding procedures for the development of listening comprehension skills of EFL learners, the present study probed into the pedagogical effects of formal practice as a cognitive scaffolding strategy, reflection and monitoring as metacognitive scaffolding strategies and note-taking as a cognitive non-scaffolding strategy on the development of listening comprehension skill of intermediate Iranian EFL learners. The

consideration of note-taking as a cognitive non-scaffolding strategy was on the grounds that scaffolding strategies in education are described as a sort of tailored support the teachers give to students to fulfil their learning goals (Gibbons, 2015; Reiser & Tabak, 2014) and such tailored support is not typically provided to the learners while they take notes during their listening comprehension activities. Additionally, the EFL learners and English teachers were asked about the most frequently applied cognitive and metacognitive scaffolding strategies in this process. In pursuit of these objectives, the following research questions were formulated:

1. Does “formal practice” as a cognitive scaffolding strategy have any significant effect on the development of listening comprehension skill among Iranian intermediate EFL learners?
2. Do “reflection and monitoring” as metacognitive scaffolding strategies have any significant effect on the development of listening comprehension among Iranian intermediate EFL learners?
3. Does “note-taking” as a cognitive non-scaffolding strategy have any significant effect on the development of listening comprehension among Iranian intermediate EFL learners?
4. Is there any significant difference between formal practice and reflection and monitoring scaffolding strategies in their effects on the development of listening comprehension among Iranian intermediate EFL learners?
5. What cognitive and metacognitive scaffolding strategies are frequently used by the teachers to scaffold their learners’ listening comprehension?
6. What cognitive and metacognitive scaffolding strategies are frequently used by learners when scaffolding each other’s listening comprehension?

Method

Design

To achieve a rather complete understanding of the diverse impacts of the given independent variables examined in the study and as a means of data collection triangulation, the researchers opted for a sequential explanatory mixed methods research design. For this purpose, both quantitative and qualitative data were collected and the acquired data underwent statistical and qualitative analyses. Subsequently, the quantitative and qualitative results were integrated and the findings were interpreted.

Participants

A total of 90 intermediate EFL learners, comprising both male and female participants, were selected through convenience sampling procedure from private language institutes of Dorood (a city in Lorestan province, central Iran). In fact, their level of general English proficiency was assessed through a TOEFL Junior Standard sample test. The age range of the individuals involved in the project, was 12 to 20 years, and they were all native Farsi speakers. Table 1 below outlines the demographic characteristics of the participants.

Table 1. Demographic information of the Study participants

Variables	Values	N	%	Mean	Range	Standard Deviation
Socioeconomic Background						
	Upper Class	12	13.2			
	Middle Class	47	51.6			
	Lower Class	31	34.1			
Prior English Exposure						
	(1-3 Years)	20	22.0			
	(3-6 Years)	40	44.0			
	(6-9 Years)	26	28.6			
	(9 Years or more)	4	4.4			
Gender	Male	28	31.1%			
	Female	62	68.9%			
Age				17	8	2
Education	Middle School	29	32.2%			
	High School	61	67.8%			
Proficiency	Intermediate	58	64.4%			
	Lower-Intermediate	32	35.6%			

Instruments

To collect data following instruments were applied:

- A sample TOEFL Junior Standard test was conducted to assess the English proficiency level of the participants. The reliability estimates released for the different parts of this test were .76 for the reading section, .75 for the listening section, .84 for the speaking section, .80 for the writing section, and .90 for the total test (ETS, 2011).
- The listening part of TOEFL Junior Standard test was applied as both pretest and posttest for evaluating listening comprehension. TOEFL Junior Standard test is an objective, reliable and valid measure of English communication skills (ETS, 2011) and the extracted part of the test measures listening comprehension in specific. To ensure the reliability of both pretest and posttest, Cronbach's alpha internal consistency test was applied and the estimated alpha for a battery of altogether 40 items turned out to be .76.
- Several tasks were chosen from "Tactics for Listening" (Richards, 2011) as the educational resource designated for the three groups of the study. This particular resource was chosen because it is appropriate for English learners at the intermediate level (Richards, 2011).
- Two semi-structured interviews aimed at collecting qualitative data regarding the most commonly employed cognitive and metacognitive scaffolding strategies in each respective group of the study. A pair of experts reviewed and provided feedback on the content and validity of the interview questions.

Data Collection Procedure

At the beginning of the study, a total of 90 EFL learners were chosen from two language institutes of Dorood using convenience sampling procedure; accordingly, as a result of the restricted number of participants in each class (10 to 15 members in each), the researchers selected two or three intact classes to form each individual research group so that every study group comprised of 30 participants in total. Prior to conduct of the study, verbal informed consent was obtained from all participants involved, who were ensured of the anonymity and confidentiality of the obtained data throughout the research process. Also, they were assured that the data would be used for research purposes only. Following this preliminary stage, the TOEFL Junior Standard sample test was administered to the participants to assess their English proficiency at the outset of the study. The listening part of the TOEFL Junior test was regarded as the pretest of the listening comprehension of the three groups. Next, having randomly assigned the three groups to different interventions, the researchers applied the following treatments to each respective study groups i.e., 1) formal practice group, 2) reflection and monitoring group, and 3) note-taking group, for 15 thirty-minute sessions. Treatment procedures of each group were as follows:

Group 1: The students collaborated in groups of three or four to accomplish tasks derived from *Tactics for listening* (Richards, 2011). Whenever they faced with an issue or a problem that could not be resolved through interaction, formal practice strategy was applied by providing a transcription, in which learners marked out unfamiliar words, made notes about intonation, and repeated the difficult statements verbally (Vandergrift, 1997a). The teacher applied the above-mentioned strategies in a contingent, graduated, and dialogic manner (Lantolf & Thorne, 2006) in this problem-solving activity.

Group 2: The tasks assigned to the first group were also assigned to this group. However, whenever the learners encountered an issue that could not be resolved through interaction, the teacher applied reflection and monitoring strategies by asking learners to reflect on their personal learning experiences, furthermore, they were asked to monitor their comprehension and development, check their understanding and identify any mistakes (Meijer et al., 2006). In operational terms, the participants of this group listened to the listening audio file of the given task. Next, they just needed to do the listening exercises of the task. Then, having checked the accuracy of their completed task against the correct choices, they were asked to monitor their comprehension progress through re-checking their understanding and the errors involved, and reflecting on the problems which might have occurred during the task completion. Accordingly, the teacher scrutinized and scaffolded their reflection and monitoring processes and provided contingent, graduated and dialogic assistance to ensure smooth application of the processes in the completion of the tasks by the participating learners.

Group 3: Note-taking strategy was administered to the participants of this group. They engaged in the same tasks that were assigned to the other groups, but they were not provided with any type of scaffolding, group work or interaction. In case of learners encountering challenges in comprehension, they took notes of titles, dates, or they took notes selectively of such main ideas, key elements, and examples (Vandergrift, 1997a).

At the last session of the treatment, the listening part of the TOEFL Junior Standard sample test was administered to all participants of the three groups as the posttest. Additionally, as for the qualitative phase of the study, a total of 30 learners, 10 participants selected from each experimental group, participated in semi-structured interviews where their responses were recorded and transcribed by the researcher. In addition, concerning EFL teachers' perspectives on the efficacy of each one the treatment procedures, 10 randomly selected English teachers from the language institutes involved in the study were interviewed, and the data obtained from these interviews underwent inductive thematic analysis. This process involved the identification, codification, analysis, and reporting of the patterns or themes found the data, with the aim of capturing something important about the data in relation to the research question.

Results

In order to examine the normality of the acquired data of the three groups, Kolmogorov-Smirnov test was applied to the scores of TOEFL Junior and listening tests. As Table 2 displays, the obtained data for TOEFL Junior pretest was normally distributed ($p = .147 > .05$). However, the obtained data for TOEFL Junior posttest, and pre and post listening tests were not normally distributed ($p = .000, .008, .000 < .05$).

Table 2. Kolmogorov-Smirnov test of normality for the three groups' pre, and post TOEFL Junior, pre, and post' listening scores

Test	Kolmogorov-Smirnov		
	Statistic	df	Sig.
Pretest TOEFL	.084	90	.147
Posttest TOEFL	.158	90	.000
Pretest Listening	.111	90	.008
Posttest Listening	.157	90	.000

Given that ANOVA analysis is robust to the deviation of normality of distribution assumption (Huber, 1982, Leech et al., 2004), to examine the homogeneity in overall English proficiency across the three groups and listening comprehension ability, two separate one-way ANOVA analyses were applied to pretest TOEFL Junior test scores and the pretest listening scores of the groups. The findings indicated a significant difference in the proficiency levels among the three groups ($F(2, 87) = 15.344, p = .000 < .05$), as well as a significant difference in their pretest listening scores ($F(2, 87) = 7.323, p = .001 < .05$).

Since ANOVA analysis results confirmed a statistically significant difference in the pretest listening scores of the groups, to determine if a significant difference existed in the scores of the listening posttest, a one-way ANCOVA analysis was administered and the results indicated that the covariate lacked statistical significance ($F(1, 86) = 1.486, p = .226 > .05$) as it accounted for merely 1.7 percent of the variance observed in the posttest results for listening (Eta squared = .017). However, a significant difference was observed among the means of the three groups in posttest for listening scores ($F(2, 86) = 29.931, p = .000 < .05$). Moreover, it accounted for 41 percent of the variance observed in the pretest results for listening (Eta squared = .41).

Next, to answer the three initial research questions, one sample matched t-tests were applied (Tables 3 and 4). As is evident in Table 3, the listening scores of participants across the three groups showed a significant increase from pre to posttest.

Table 3. Descriptive statistics of the three groups' scores on the pre and post listening test

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pretest Reflection & Monitoring	11.10	30	3.614	.660
	Posttest Reflection & Monitoring	17.07	30	2.083	.380
Pair 2	Pretest Formal practicing	7.33	30	3.565	.651
	Posttest Formal practicing	14.80	30	2.091	.382
Pair 3	Pretest Note taking	9.93	30	4.464	.815
	Posttest Note taking	11.33	30	4.122	.753

Table 4. Paired samples T-test analysis of the pre and post listening test scores

		Paired Differences				t	df	Sig. (2-tailed)	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower				Upper
Pair 1	Pre- and posttest Reflection & Monitoring	-5.967	4.021	.734	-7.468	-4.465	-8.127	29	.000
Pair 2	Pre- and posttest Formal practicing	-7.467	4.732	.864	-9.234	-5.700	-8.642	29	.000
Pair 3	Pre- and posttest Note taking	-1.400	6.463	1.180	-3.813	1.013	-1.187	29	.245

As is displayed in Table 4, a significant increase was identified between the pretest ($M = 11.10$, $SD = 3.614$) and posttest ($M = 17.07$, $SD = 2.083$) in reflection and monitoring group, $t(29) = -8.127$, $p = .000 < .05$. Furthermore, a notable statistically significant enhancement was identified between the pretest ($M = 7.33$, $SD = 3.565$) and posttest ($M = 14.80$, $SD = 2.091$) in formal practice group, $t(29) = -8.642$, $p = .000 < .05$. However, the analysis revealed no statistically significant increase from pretest ($M = 9.93$, $SD = 4.464$) to posttest scores ($M = 11.33$, $SD = 4.122$) within note-taking group, $t(29) = -1.187$, $p = .245 > .05$.

In relation to the fourth research question, a one-way ANOVA was conducted to determine if there were significant differences in the posttest scores among the three groups. As Table 5 displays, the mean score of posttest results in reflection and monitoring group was higher than those of formal practice and note-taking groups. As Table 6 indicates, the assumption of homogeneity of variances was violated ($Sig = .000 < .05$).

Table 5. Descriptive statistics of the three groups' scores on the listening posttest

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
Reflection & Monitoring	30	17.07	2.083	.380	16.29	17.84	13	20
Formal practicing	30	14.80	2.091	.382	14.02	15.58	11	18
Note taking	30	11.33	4.122	.753	9.79	12.87	5	18
Total	90	14.40	3.741	.394	13.62	15.18	5	20

Table 6. Test of homogeneity of variances of the experimental groups

		Levene Statistic	df1	df2	Sig.
Posttest	Based on Mean	16.431	2	87	.000
Listening	Based on Median	13.349	2	87	.000
	Based on Median and with adjusted df	13.349	2	60.447	.000
	Based on trimmed mean	16.420	2	87	.000

As Table 7 displays below, a significant statistical difference was observed in the posttest scores across the three groups ($F(2, 87) = 29.197, p = .000 < .05$). In order to identify the exact location of difference, Tukey HSD post-hoc test was applied. The findings of Tukey HSD post-hoc test (Table 8) revealed that the mean score for reflection and monitoring group ($M = 17.07, SD = 2.083$) was significantly different from formal practice group ($M = 14.80, SD = 2.091$) and note-taking group ($M = 11.33, SD = 4.122$).

Table 7. One-way ANOVA analysis of the posttest scores of the experimental groups

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	500.267	2	250.133	29.197	.000
Within Groups	745.333	87	8.567		
Total	1245.600	89			

Table 8. Tukey HSD post hoc tests of the posttest listening test scores of the groups

(I) Groups	(J) Groups	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Reflection & Monitoring	Formal practicing	2.267*	.756	.010	.46	4.07
	Note taking	5.733*	.756	.000	3.93	7.54
Formal practicing	Reflection & Monitoring	-2.267*	.756	.010	-4.07	-.46
	Note taking	3.467*	.756	.000	1.66	5.27
Note taking	Reflection & Monitoring	-5.733*	.756	.000	-7.54	-3.93
	Formal practicing	-3.467*	.756	.000	-5.27	-1.66

To address the research questions number five and six, the most frequent cognitive and metacognitive scaffolding strategies applied for the development of listening comprehension were identified through semi-structured interviews with a sample of participants from each

respective group and ten English teachers. The answers to interview questions were recorded and subsequently transcribed. Afterwards, the transcribed interviews were subject to content analysis to extract and identify the most frequent themes. The findings are presented in Tables 9 and 10. Due to the small sample size of the sample of interviewees, the findings of Tables 9 and 10 need to be cautiously interpreted.

The interview questions asked from the English teachers, the most frequent themes extracted from the interview data, the frequencies (N), and the percentages are displayed in Table 9.

Table 9. *The teachers' interview results*

Questions	Themes	N	%
1. Which one of the scaffolding strategies did you find efficient in classroom situation?	Note taking	2	20
	Formal practicing	3	30
	Reflection & Monitoring	5	50
2. What are the merits of each one the mentioned scaffolding strategies in classroom situation?	Reflection & Monitoring Strategies	1	10
	Active class participation	5	50
	Autonomy	1	10
	Self-assessment	1	10
	Better comprehension	2	20
	Self- & peer monitoring	1	10
	Improve speaking	1	10
	Critical thinking		
	Formal practicing Strategy	4	40
	Focusing on form	3	30
	Vocab expansion	1	10
	Better task performance	1	10
	Improve pronunciation		
	Note taking Strategy	2	20
	Reminding words	2	20
	Better summarization		
Meaning conveyance			
3. What are the demerits of each one of the mentioned scaffolding strategies in classroom situation?	Reflection & Monitoring Strategies	4	40
	Lack of prior knowledge	1	10
	Demotivating		
	Formal practicing Strategy	1	10
	Less serious	2	20
	Lack of productivity	2	20
	Being monotonous	3	30
	Too focused on form		
	Note taking Strategy	1	10
	Cheating opportunity	1	10
	Dependency of learners	3	30
	Time-consuming	3	30
	Distracting		
	Puzzling		
4. In comparison, which one of the scaffolding strategies did you find efficient the most in classroom situation?	Note taking	1	10
	Formal practicing	3	30
	Reflection & Monitoring	6	60

The interview questions asked from the EFL learners of three groups, the most frequent themes in the interview data, the frequencies (N), the percentages (%) are presented in Table 10 below.

Table 10. *The interview results of the three learner groups*

The Learners' Interview Questions	Group 1 (Reflection & Monitoring)			Group 2 (Formal Practicing)			Group 3 (Note Taking)		
	Themes	N	%	Themes	N	%	Themes	N	%
1. What did you think of marking out unfamiliar words in the transcribed listening text?	Highlighting words	3	30	Distracting	1	10	Vocab expansion	6	60
		5	50	Less facilitative	2	20	Focusing on form	1	10
	Focusing on form	2	20	Vocab expansion	4	40	Less effective	3	30
	Instructive			Better comprehension	3	30			
2. What did you think of making notes about the intonation of the listening statements?	Meaning conveyance	3	30	Meaning conveyance	6	60	Meaning conveyance	4	40
	Less effective	4	40		4	40	Improve speaking	3	30
	Less serious	2	20	Better comprehension			Improve pronunciation	1	10
	Improve speaking	1	10				Focusing on form	2	20
3. What did you think of repetition of the difficult statements verbally from the provided transcription?	Improve pronunciation	3	30	Focusing on form	2	20	Reminding words	3	30
	Vocab expansion	4	40	Reminding words	1	10	Focusing on form	2	20
	Less effective	3	30	Improve speaking	1	10	Vocab expansion	2	20
				Improve pronunciation	3	30	Improve pronunciation	1	10
				Improve pronunciation	2	20	Less effective	1	10
				Vocab expansion	1	10			
4. What did you think of reflecting on your own learning and performance during the listening task?	Biased assessment	3	30	More accuracy	1	10	Time consuming	1	10
	Motivating	4	40	Less effective	2	20	Lack of knowledge	1	10
	Meaning conveyance	3	30	Better comprehension	1	10	Motivating	2	20
	Effective			Distracting	2	20	Instructive	4	40
	Self-correction			Motivating	2	20	Better comprehension	1	10
				Critical thinking			Biased assessment		
5. What did you think of evaluating progress and comprehension	Better comprehension	2	20	Better comprehension	1	10	Better task performance	6	60
	Task preparation	2	20	Motivating	3	30	Motivating	3	30
	Motivating	2	20	Instructive	2	20		1	10
		2	20	Biased assessment	1	10			
		2	20		1	10			

of the listening task?				Lack of knowledge	2	20			
				Self-assessment					
6. What did you think of taking note of titles, dates, main ideas, key elements, and examples of the listening task?	Reminding words	5	50	Time consuming	1	10	Reminding words	2	20
	Better summarization	3	30	Better task performance	5	50	Better narration	3	30
	Better narration	2	20	Reminding words	3	30	Meaning conveyance	2	20
	Better comprehension			Less effective	1	10	Time wasting	1	10
	Distracting						Better task performance	1	10
							Distracting		
7. Which one of these listening strategies did draw your attention the most?	Note taking	3	30	Reflection & Monitoring	5	50	Note taking	6	60
	Reflection & Monitoring	1	10	Note taking	1	10	Repetition	1	10
	Repetition	2	20	Repetition	1	10	Highlighting words	1	10
	Intonation	2	20	Highlighting words	3	30	Intonation	1	10
							Reflection & Monitoring		
8. Which one of these listening strategies did you find efficient the most?	Reflection & Monitoring	4	40	Intonation	1	10	Reflection & Monitoring	2	20
	Repetition	3	30	Repetition	2	20	Repetition	2	20
	Highlighting words	1	10	Highlighting words	4	40	Highlighting words	4	40
	Note taking	2	20	Reflection & Monitoring	3	30	Highlighting words	2	20
							Note taking		
9. Which one of these listening strategies did you find efficient the least?	Highlighting words	1	10	Highlighting words	1	10	Highlighting words	2	20
	Intonation	3	30	Intonation	1	10	Intonation	4	40
	Repetition	3	30	Repetition	1	10	Intonation	2	20
	Reflection & Monitoring	1	10	Reflection & Monitoring	4	40	Repetition & Monitoring	2	20
	Note taking	2	20	Note taking	3	30	Note taking		
10. Which one of these listening strategies are you more interested in working with?	Reflection & Monitoring	6	60	Reflection & Monitoring	4	40	Highlighting words	3	30
	Note taking	2	20	Note taking	2	20	words	4	40
	Repetition	2	20	Highlighting words	4	40	Note taking	2	20
							Reflection & Monitoring	1	10
							Repetition		

As is evident in Table 9, it can be generally inferred that all the teachers had mainly positive attitude toward these strategies, nevertheless, according to the identified themes and the percentages, reflection and monitoring were considered as the most frequent scaffolding strategies compared to formal practice and note-taking strategies. In addition, the teachers' positive attitude towards scaffolding strategies indicates that each one of the strategies was found helpful in learners' listening comprehension development.

Additionally, as is illustrated in Table 10, all of the learners had mainly positive attitude towards the strategies, nevertheless, reflection and monitoring strategies (group 1) were the most recurring strategies compared to formal practice strategy (group 2), and note-taking strategy (group 3). Moreover, the themes identified in group 1 suggested that the interviewees perceived a more significant enhancement in their listening comprehension compared to group 2, and group 3. It could be observed that the positive attitudes and listening comprehension developments were more frequently reported and admitted in group 1 compared to group 2, and 3, which might confirm that reflection and monitoring scaffolding strategies were more efficient from the teachers' and learners' point of view.

Discussion

This investigation explored the comparative efficacy of “formal practice” as a cognitive scaffolding strategy, “reflection and monitoring” as metacognitive scaffolding strategies, and “note-taking” as a cognitive non-scaffolding procedure on the development of listening comprehension among EFL learners. Moreover, the most frequent types of cognitive and metacognitive scaffolding strategies employed by the learners and teachers were explored.

The first research question was formulated to investigate the potential impact of formal practice scaffolding strategy on the development of learners' listening comprehension. The results indicated that the posttest mean scores enhanced remarkably. Furthermore, the statistical analyses substantiated the importance of the disparity observed between the mean scores of the pretest and posttest. The findings highlighted that the impact of formal practice scaffolding strategy on the development of listening comprehension among EFL learners was distinctively significant.

Earlier studies have also reported similar findings. Mackiewicz and Thompson (2014) for instance confirmed that the application of cognitive scaffolding facilitates learners' overview of their own thinking and facilitates task completion. From another vantage point, Sok and Shin (2021) concluded that cognitive learner variables played a crucial and interconnected role in the comprehension of L2 listening. On the contrary, some investigations attested to the lower efficacy of cognitive scaffolding strategies. Dimassi (2016) claimed that in comparison to metacognitive scaffolding, cognitive scaffolding strategies proved to be insufficiently effective, and metacognitive scaffolding strategies were more preferable over the cognitive scaffolding strategies in listening comprehension development. Accordingly, Ahmadi Safa and Mottaghi (2024) verified the superior effect of metacognitive scaffolding processes over cognitive ones on the development of listening comprehension among EFL learners. A similar pattern was obviously tangible in the interview findings, where formal practice as a cognitive scaffolding strategy was noticeably considered less functional than metacognitive scaffolding strategies by the learners and teachers. In conclusion, the study findings and the literature confirmed the significant impact of cognitive scaffolding strategy in listening comprehension, however when it came to the comparison of cognitive scaffolding strategies with metacognitive strategies all the evidence witnessed the superiority of metacognitive strategies over cognitive ones. A probable reason in this concern might be the regulative nature of metacognitive scaffolding strategies which provided the learners with an overall view towards the problematic aspects of the tasks and how to address them (Ahmadi Safa & Mottaghi, 2024)

The second research question was directed at the impact of reflection and monitoring scaffolding strategies on the development of learners' listening comprehension. The findings confirmed that reflection and monitoring were the most efficient scaffolding strategies compared to the other studied strategies. Moreover, similar to the results of the qualitative phase of the study, reflection and monitoring scaffolding strategies created an environment that facilitated a more structured listening experience for the learners. Furthermore, the students found the application of metacognitive scaffolding strategies motivating and stimulating as they reflected on and monitored their own performance in the listening task.

Numerous similar studies, (e.g., Bozorgian et al., 2020) proposed that the metacognitive pedagogical sequence and metacognitive scaffolding strategies led to higher listening performance. Bozorgian et al. (2020) claimed that the implementation of metacognitive intervention resulted in a significant improvement in listening performance. In addition, Maftoon and Fakhri Alamdari (2016) maintained that the overall listening performance and metacognitive awareness of learners underwent significant changes due to the application of metacognitive scaffolding procedure. On the other hand, some contrastive findings are also reported concerning the effectiveness of metacognitive scaffolding strategies. Molenaar et al. (2011) proposed that metacognitive scaffolding strategies were not seen as significantly effective procedures for the learners' performance and their gained domain knowledge. Similarly, Ghorbani Nejad and Farvardin (2019) concluded that metacognitive awareness demonstrated a negligible relationship with listening skills in a second language. As the findings implied, both cognitive and metacognitive scaffolding procedures were applied for the development of listening comprehension; however, the efficacy of cognitive scaffolding procedures for listening comprehension development were less frequently admitted in the studies. On this basis, it is empirically logical to conclude that the metacognitive scaffolding strategies seem to be more effective compared to cognitive scaffolding procedures.

The third research question concentrated on the impact of note-taking non-scaffolding strategy on the learners' listening comprehension development. The results revealed that note-taking was the least frequent strategy among the learners and teachers compared to the other strategies. Further, note-taking as one of the cognitive strategies was efficient in classroom situation though it was not found to be the most efficient one.

Regarding interview results, one of the most typical drawbacks of note-taking strategy as was reported by the learners was that they were distracted by taking notes while they were struggling with the listening task. It led to the learners' incomplete comprehension during the task. Moreover, the interviewees found note-taking as a time-consuming strategy where learners had to allocate a huge amount of time to it during the listening task. The findings were not in contrast with the studies in which note-taking strategy was found less efficient compared to reflection and monitoring, and formal practicing scaffolding strategies. The point was in fact verified yet again as Ahmadi Safa and Mottaghi (2024) confirmed that non-scaffolding strategies were the least efficient procedures compared to metacognitive and cognitive scaffolding procedures for the development of learners' listening comprehension. In contrast to non-scaffolding procedures, a group of experts upheld the necessity of scaffolding strategies (Gibbons, 2015; Reiser & Tabak, 2014). Moreover, the preferred form of assistance is found

to be scaffolding rather than non-scaffolding assistance (Ahmadi Safa & Beheshti, 2018; Beheshti & Ahmadi Safa, 2020).

The fourth research question investigated the distinctions between formal practice, and reflection and monitoring scaffolding strategies in their impacts on the development of learners' listening comprehension. According to descriptive statistics and the analyses of the interview transcriptions, the EFL learners' listening comprehension was affected by the reflection and monitoring scaffolding strategies. The findings suggested that reflection and monitoring scaffolding strategies were remarkably significant. This indicated that reflection and monitoring group outperformed both formal practice group and note-taking group. Dimassi (2016) similarly confirmed the superior efficacy of the reflection and monitoring scaffolding strategies and claimed that metacognitive strategy-based instruction method was more effective than cognitive strategy-based instruction methods in students' listening comprehension development.

The interviewees in reflection and monitoring scaffolding strategies group focused on their thought, and self-assessment, whereas learners in formal practicing scaffolding strategy were concerned about linguistic forms and sound system of language. Reflection and monitoring scaffolding strategies led learners to metacognition and critical thinking where learners gained a huge amount of metacognitive awareness through reflecting on their learning and performance during the listening task, additionally they checked their progress and comprehension of the listening task through monitoring. The interview data analysis further indicated that reflection and monitoring scaffolding strategies shift learning into a more meaningful process. The results exhibit a degree of alignment with Molenaar et al. (2014) that claimed intra-group social metacognitive interaction was noticeably improved through metacognitive scaffolding strategies which provided learners with practice opportunities in thinking activities. Accordingly, Shamsi and Bozorgian (2024) declared that collaboration, interaction, and the administration of metacognitive scaffolding procedures develop learners' ability to comprehend listening material.

The fifth research question addressed the most frequent cognitive and metacognitive scaffolding strategies applied by the teachers. The analysis of the qualitative data mostly confirmed the quantitative results and authenticated the effect of application of reflection, monitoring, and formal practice scaffolding strategies on the enhancement of EFL learners' listening comprehension. Accordingly, L2 teachers employ metacognitive strategies to enhance learners' critical thinking and independency and to provide the situation for learners to perform as a reflective thinker in the learning environment (Zeng & Goh, 2018).

Almost all of the teachers who were interviewed confirmed that the cognitive and metacognitive scaffolding procedures were efficient enough but in differing degrees. The obtained themes from the interviews revealed that teachers found scaffolding strategies helpful in learners' autonomy development in a way that they became capable of performing the task without consistent assistance. Moreover, these strategies facilitated the processes of learners' vocabulary expansion, the conveyance of meaning, self- and peer assessment, and critical thinking. Accordingly, Richards and Schmidt (2011) defined scaffolding as an educational approach wherein both the instructor and students engage collaboratively in problem-solving

activities. In this regard, Wolf et al. (2016) claimed that the main objectives of employing scaffolding strategies in education are to furnish background knowledge and to implement metacognitive scaffolding procedures, thus students are enabled to complete a task or attain a learning objective. As the interview results revealed, the teachers were convinced that almost all of the applied scaffolding strategies in classroom situation were efficient. However, reflection and monitoring scaffolding strategies were considered as the most efficient listening strategies compared to the other strategies. In this regard, Nazari (2018) stated that the teachers regard metacognitive listening instruction as a valuable pedagogical strategy and incorporate it into their teaching practices.

The sixth research question concentrated on the most frequent cognitive and metacognitive scaffolding procedures used by the learners. The findings of the quantitative phase were greatly verified by the qualitative results which supported the efficacy of reflection and monitoring, formal practice scaffolding strategies, and note-taking non-scaffolding strategy.

The majority of the EFL learners who were interviewed in group 1 found reflection and monitoring scaffolding strategies as the most efficient procedures compared to the other strategies. The interviewees found the tasks instructive, motivating, and effective in listening comprehension development. Additionally, the application of reflection and monitoring scaffolding strategies led learners to metacognition and critical thinking, where learning shifted into a meaningful process. The findings might be justified considering the finding that expert peers use different scaffolding strategies compared to coequals, and they help their peers to learn better (Ahmadi Safa & Rozati, 2017). Similarly, Zheng et al. (2019) suggested that monitoring made learners aware of their learning process, and reflection helped learners to internalize their metacognitive skills.

Nearly half of the learners who were interviewed in group 2 had a relatively positive attitude towards formal practice scaffolding strategy. The interviewees found the formal practice scaffolding strategies facilitative in better comprehension, meaning conveyance, and vocabulary expansion. On the other hand, marking out unfamiliar words, and repetition of the difficult statements verbally from the provided transcription as tasks of formal practice scaffolding strategy were considered less facilitative. This finding seems to partially endorse Oxford (2016) results in which she maintained during the learning process even effective L2 learners may experience both positive and negative emotions.

Almost half of the participants in group 3 believed that note-taking non-scaffolding strategy was effective for their listening comprehension development. Some of the interviewees found writing down the keywords, concepts, and transcription tasks beneficial as they were capable of better performance in the task. However, they encountered some difficulties such as lack of concentration, being distracted by unfamiliar words or expressions, diversity of accents, and white noises. Regardless of all the challenges, the learners in group 3 made progress, however, they found note-taking as the least effective strategy compared to the other strategies. One justification for the finding might be found in what Song (2012) proposed saying that note-taking task proved to be a more effective measure of second language listening proficiency compared to an open-ended task. Also, better mastery of note-taking is rooted in the pedagogical sequence presentation (Bozorgian et al., 2021).

Conclusions

The findings of the study suggested that reflection and monitoring as metacognitive scaffolding strategies were the most efficacious strategies; moreover, note-taking as a cognitive non-scaffolding procedure was considered as the least efficacious strategy for the enhancement of learners' listening comprehension. The analyses of both quantitative and qualitative data indicated that the learners found reflection and monitoring as the most efficient procedures compared to formal practice scaffolding and note-taking non-scaffolding strategies. To put it differently, reflection and monitoring procedures facilitated a structured listening environment for learners, thereby enhancing the management of their cognitive functions and fostering metacognitive procedures, which contributed to their listening comprehension development. Furthermore, the learners found metacognitive scaffolding strategies motivating and stimulating as they reflected on and monitored their own performance in the listening task. Additionally, collaboration among language learners demonstrated the attributes of various regulatory scales within the learners' ZPD. Also, the teachers agreed that reflection and monitoring were the most efficient scaffolding strategies in classroom situation. These findings initially suggest that the administered procedures whether of scaffolding or non-scaffolding types led to emotionally positive attitudes of the learners. Second, reflection and monitoring as metacognitive scaffolding procedures were quite efficacious for the improvement of the emotionally positive and productive learning environments. Such a constructive atmosphere encourages the individuals involved in the process of learning a new language to be more engaged with the fruitful mechanisms of other-regulation within their own ZPD.

Finally, it is important to note that any attempts to generalize the findings of this study to other L2 contexts ought to be carried out with care, given several inherent limitations. First, the generalizability of the findings might have been unfavorably affected as the researchers were unable to achieve a genuinely random selection of participants. Second, the research was constrained by specific age range and the participants' proficiency in English language. Third, the feedback of the learners and teachers were at the risk of being biased (e.g., social desirability) as they overwhelmingly favored metacognitive strategies. Fourth, the internal validity was partially threatened as a significant difference was witnessed in pretest listening scores across groups.

Finally, on the basis of the study findings, challenges and limitations, researchers are suggested to focus on other metacognitive strategies including planning, evaluation, and problem identification and cognitive strategies including inferencing, elaboration, and summarization. Furthermore, a more extended treatment period and a larger sample size for the qualitative phase of the study might lead to a more conclusive results in future studies.

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