The Effect of Metacognitive Instruction on Asynchronous L2 Listening during the Pandemic on EFL Learners

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Abstract

Metacognitive Instruction (MI) is an instructional procedure that increases the learners' awareness of the listening processes by developing their personal knowledge, task knowledge and strategy knowledge and orchestrating available listening strategies for effective listening in independent settings (Vandergrift & Goh, 2012). This study was carried out during the pandemic to determine if there was any relationship between metacognitive instruction and listening comprehension in increasing Bangladeshi EFL undergraduate learners' L2 listening performance by manipulating metacognitive strategies; planning, monitoring and evaluation in aligning with metacognitive knowledge, task knowledge and strategy use while listening. It also investigated if metacognitive instruction affected high and low achievers' performance. For this experimental study, one hundred twenty-four Bangladeshi undergraduate EFL learners in the experimental group (n = 62) and control group (n = 62) received asynchronously metacognitive instruction and traditional instruction based on the product approach, respectively, for five weeks using five transactional listening texts. To gauge any possible changes in listening comprehension, pre-test, post-test and metacognitive awareness listening questionnaires (MALQ) were administered. The findings showed that metacognitive instruction and listening comprehension had significant positive relation, and low successful achievers' level of comprehension improved exponentially.

Keywords: Metacognitive instruction, MALQ, metacognitive awareness, asynchronous, listening, online

1. Introduction

The global COVID-19 pandemic outbreak in 2020 led educational institutions to conduct online classes irrespective of the language management system (LMS), largely manipulating English language education with limited resources and preparation. The need for asynchronous or on-demand online classes was the demand of the time to conduct classes remotely with the then-existing access and availability of technology, electronic gadgets to learners who live on the outskirts of the cities. Lack of dedicated internet facilities also encouraged learners to acquire new knowledge of various applications like Zoom, Google classroom, Google Forms, etc. of G-suites, Padlet, Kahoot, etc. Though the synchronous or lived online classes with video conferencing might bring the essence of face-to-face classrooms to some extent, asynchronous online courses empowered learners with access to tasks and activities at their convenience and to complete them without attending the real-time online classes. Preparing asynchronous listening skill classes was challenging to meet the various communicative goals of the task-based language teaching and incorporate other techniques, namely pair work, group work and individual work. This paper attempted to implement asynchronous Ed-Techs such as Google classroom, Google forms, Padlet, Kahoot, Flipgrid and Microsoft Office, analyse and discuss them to facilitate high and low achievers' performance, their metacognitive strategy use and overall success in listening comprehension compared to synchronous classes in traditional product-based approach (Martin, 2006; Vandergrift and Goh, 2012; Vandergrift, 2006).

For this study, listening, the "Cinderella" skill (Mendelsohn, 1994; Vandergrift, 1997) was studied because it is considered

arguably the least understood and most overlooked of the four skills (listening, speaking, reading and writing) in the language classroom (Nation and Newton, 2008) in Bangladeshi curriculum. It gained attention after communicative language teaching (CLT) for effective oral communication. However, the scenario of teaching listening in Bangladesh at the undergraduate level is almost synonymous with Goh's (2008) report. The traditional listening teaching techniques, which merely expect learners to answer comprehension questions based on a listening passage, are still very common in many classrooms in Bangladesh and other countries of the Indian sub-continent and Southeast Asia. Hence, most L2 listening classes became "the product of listening" (Goh, 2008), directly affecting the overall comprehension. Teachers focused on the product and hardly paid any attention to the process of learners' comprehension or "how learners arrive at comprehension" (Fahim, 2014).

After analysing English textbooks (from 1960 to 2021) (Azran, 2018, MA thesis, p. 20-50 unpublished), it is evident that listening obtained its role in the complete cycle of the teaching and learning English like,

      i) listening during behaviourist paradigm as bottom-up or linear processing of information ranging the 1960s,

      ii) listening during interactionist or sociolinguistics paradigm as top-down and context-driven interpretation ranging the 1980s, and

      iii) socio-cognitive models of comprehension from the 1990s to date rule the learning or teaching of L2 listening (Goh, 2008).

The input, instructional focus and learning activities were changed with the paradigm shift in teaching listening (Goh, 2008). With the socio-cognitive models of comprehension, metacognition in

teaching instruction was prevailing to be incorporated, especially in teaching listening around 2010. Rising metacognitive awareness among learners with existing texts becomes a challenge of the time, bringing the highest success in teaching listening. Therefore, the embodiment of strategy-based instruction and metacognitive awareness development has been called for because the former refers to a set of classroom procedures that explicitly train learners to employ relevant strategies to improve their performance (Cohen, 1998). Simultaneously, the latter focuses on learners' self-discovery in developing knowledge, belief and awareness about the learning process with appropriate scaffolding and teachers' facilitation (Wenden, 1998). Furthermore, there is virtually no randomised intervention study to explore the effectiveness of metacognitive awareness in developing the metacognitive knowledge and listening performance of Bangladeshi undergraduate EFL learners. Hence, conducting an intervention study to investigate learners' use of metacognitive strategies asynchronously during the pandemic to raise metacognitive awareness assumes a greater practical value for listening instruction in Bangladesh.

The metacognitive awareness listening questionnaire (MALQ) with five factors of metacognition awareness and the pre-and post-test would be appropriate data collecting tools for this study after the metacognitive instruction among the high and low achievers. Because these tools can screen what is happening "at the time of the language learning" and when such a procedure is used for collecting information about how language learners go through the learning process (Cohen, 1996).

2. Literature review

Metacognition

According to Flavel (1976), metacognition is "one's knowledge concerning one's cognitive processes or anything related to them" (p.232). In 1998, Wenden defined it as learners' "Knowledge about learning". Metacognition consists of knowledge of cognition and regulation of cognition (Schraw, 1998). Here, the first is about the learner's knowledge about his/her mental processing involving declarative knowledge, procedural knowledge and conditional knowledge, and the other is about the orchestration of his/her learning by applying planning, monitoring and evaluation. Further, metacognitive knowledge is divided into person knowledge, task knowledge and strategy knowledge (Flavel, 1979). Person knowledge is the knowledge about oneself and others' cognitive processors that affect one's learning. Task knowledge is the knowledge about the task to undertake or complete the task. Strategy knowledge is the knowledge regarding effective strategies for achieving goals and undertaking tasks. These three types of knowledge interact during the learning process and learning outcomes (Wenden, 1998). Goh and Taib (2006) argued that "any development in these three aspects of metacognitive knowledge will enable learners to apprise themselves and to select appropriate strategies for improving their listening performance (p. 223)."

Metacognitive instruction in listening

According to Vandergrift and Goh (2012), metacognitive instruction evolves as a pedagogical approach to L2 listening. It targets the development of learners' person knowledge, task knowledge and strategy knowledge and their ability to self-

manage their listening through a range of process-based instructional activities, which stimulate metacognitive experience. Cross (2015) pointed out that it "is a holistic approach to L2 listening instruction, which aims to enhance each of the three knowledge factors to be inculcated in L2 listeners and does not just focus narrowly on promoting strategy knowledge (and use)" (p. 4). Goh (2010) indicated that metacognitive instruction in listening could be beneficial to learners in at least three ways:

i)   It improves affect in listening, helping learners be more confident, more motivated and less anxious.
ii) It increases learners' knowledge about the listening process and themselves as L2 listeners.
iii) It positively affects listening performance and strategy use for facilitating comprehension.

She further argues that metacognitive instruction in listening is to help learners develop awareness about factors influencing their listening and learning processes. Vandergrift (2004) and Goh (2008) stated the validation for integrating metacognitive instruction into teaching listening comprehension. It can promote learners' awareness of their listening and learning processes and develop their ability to use appropriate strategies in various contexts.

Goh (2008) opined that metacognitive instruction could inherently strengthen learners' awareness and listening process to assist them in what they choose to process learning and improve successful language learning by acquiring metacognitive strategies. Hence, the need for a long-term direct explanation, modelling strategies, and strategies with guided practice to use appropriate strategies in different contexts was demanded (Pressley, 2002). Mendelsohn (1998) also believed that

metacognition is to go through a series of activities that encourage the use of planning, monitoring, and evaluating strategies for a given listening text. Considering these studies, Vandergrift and Goh (2012) developed "pedagogical procedures that enable learners to increase awareness of the listening process by developing richer metacognitive knowledge about themselves as listeners, the nature and demands of listening, and strategies for listening" (p. 97). This metacognitive pedagogical sequence provides learners to exploit dialogic interactions in negotiating metacognitive strategies. It also merges two aspects of learning: "learning as an individual cognitive enterprise and learning as a social enterprise" (Vandergrift & Goh, 2012, p. 93). The metacognitive pedagogical sequence involves the instruction of metacognitive strategies in five sequential phases every session, presented in Table 1.

Table 1

Listening instruction stages and related metacognitive strategies. (Vandergrift and Goh, 2012, p.110)

Pre-listening: Planning/ Predicting stage	1. In pairs, the students are asked to anticipate the possible types of information, words, or phrases that may appear after they have been provided with the topic and text type of the listening task.
First listen: First verification stage	2. The instructor played the recording while the students were individually completing the task and taking notes of what they heard. 3. The students worked in pairs to compare and revise what they had listened to, then identify essential information that listeners needed to concentrate on.

Second listen: Second verification stage	4. The instructor replayed the recording so that the students could confirm inconsistency, complete missing points, and modify and write down some more information they could catch.
	5. The students discussed and shared the points that need more attention and relevant information, then reflected upon the way they interpret words, terms, or parts of the text.
Third listen: Third verification stage	6. The students themselves listened to the recording and entered their answers into the system. The web-based system was automatically graded students' answers.
Reflection stage	7. The students were encouraged to show the points which were difficult to understand and contribute possible tactics to solve them. In case they had no resolution, the instructor would provide them with strategies to enable them to solve the task. Next, the instructor showed the students the answers to the listening task. Eventually, students were required to summarise useful strategies for further listening activities.

First, O'Malley (1987) focused on the effect of cognitive and metacognitive strategy training on L2 listening of seventy-five learners into three groups, a metacognitive, a cognitive, and a control group. This study had three dimensions, which led the pedagogical sequence to stand alone. Then, O'Malley and Chamot (1990) studied a group of intermediate ESL learners who received instruction in metacognitive, cognitive, and socio-affective strategies for academic listening. They found that the

experimental groups outperformed the control group in all daily tests, and in three out of four tests, the metacognitive group outperformed the cognitive group. Vandergrift (1996) studied French learners divided into cognitive, metacognitive, and socio-affective groups by using a structured interview to examine their strategies use. The result showed that three categories of strategies were distinguished, and the use of the total number of strategies for metacognitive categories increased at a higher level. They also found that females were reported to use more metacognitive strategies than males. In the same year, Thompson and Rubin (1996) investigated the effect of process-based cognitive and metacognitive strategy training on the listening performance of Russian language learners at university. The result showed that the experimental group who received the strategy instruction in listening significantly improved. Next year, Goh (1997) extensively studied Chinese students' metacognitive knowledge in L2 listening comprehension using learners' diaries and reported or reiterated three types of metacognitive knowledge. In the same year, Vandergrift (1997) investigated the strategies used by French learners at the beginning and intermediate levels. The result showed that intermediate-level learners used almost double metacognitive strategies as learners at the beginning level. Furthermore, beginning-level learners relied on elaboration, transfer, and inferencing. In another study, Vandergrift (2003) investigated listening comprehension strategies among more- and less- skilled seventh-grade French learners in Canada by applying think-aloud protocol after listening to several French texts. The result showed that the more skilled listeners used more metacognitive strategies, especially comprehension monitoring, than the less-skilled listeners. Furthermore, more skilled listeners engaged in questioning for clarification, and the less skilled used more translation. Goh and Taib (2006) examined Singaporean

young learners' awareness of L2 listening and their perceived improvements in listening ability. Their perception showed that less-skilled listeners made the greatest improvements through pre-test and post-test scores. In a longitudinal study, Graham and Macaro (2008) explored the effects of strategy instruction on the 'listening performance and self-efficacy of 68 lower-intermediate learners of French in England'. The result showed that strategy instruction "improved listening proficiency and learners' confidence about listening" (Graham and Macaro, 2008). Cross (2009) took strategic intervention with both the experimental (n=7) and the comparison (n=8) groups who were exposed to a repetitive instructional methodology. It was a cycle of the metacognitive processes of planning, monitoring, and evaluating. The experimental groups received explicit cognitive strategy training and listening practice. The results demonstrated that both groups increased statistically significantly in the post-test. Vandergrift and Tafaghodtari (2010) investigated the pedagogical cycle to measure two groups of French learners' comprehension performance. The experimental group received metacognitive instruction, and the control group did not receive any instruction. The result of the analysis of pre-test and post-test listening comprehension scores showed that the experimental group significantly outperformed the control group. Cross (2011a) conducted a study on the effect of metacognitive instruction on listeners' comprehension on only twenty adults, Japanese, advanced level EFL learners using the "pedagogical cycle" of predicting, monitoring, problem identification, and evaluating five listening lessons aiming at promoting their comprehension. The results showed that less-skilled listeners notably improved. A few sociocultural-informed studies investigating the effect of metacognitive instruction and dialogic interactions on the listening performance of EFL learners were conducted. Cross

(2009) investigated the development of metacognition in advanced Japanese learners demonstrating the collaborative dialogue to develop an awareness of the metacognitive processes involved in listening. Furthermore, Cross (2010) explored metacognitive awareness in second language listening on twelve advanced Japanese EFL learners. The findings of the study showed that learners could afford and exploit opportunities to increase their metacognitive awareness of L2 listening. But Cross (2011b), with six pairs of Japanese EFL learners, completed dialogic recalls pertaining to the use of strategies to comprehend news video texts. The results revealed that dialogic recalls could be used "as a tool for classroom-based listening strategies research" (Cross, 2011b). Investigating the impact of metacognitive instruction on listening comprehension had been promising, but the methodological constraints due to the challenges inherent in classroom-based action research (Dörnyei, 2007) were always evident.

Hence, this study attempted to gauge the effect of metacognitive instruction on Bangladeshi EFL learners' listening performance asynchronously during the pandemic. Therefore, this study was carried out to find if there is any change(s) between learners' performance after the metacognitive instruction compared to traditional instruction and the effect of metacognition instruction on high and low achievers of the experimental group during their L2 listening comprehension. The two research questions for this study are as follows:

i)   What is the relationship between metacognitive instruction and listening comprehension?

ii)   What are the effects of metacognitive instruction on high achievers' and low achievers' listening comprehension?

3.Methodology

Learners

One hundred twenty-four male and female learners of the first semester of the first year of Bachelor of Arts in English at a private and a public university in Bangladesh participated in this study. After attending the proficiency test and demographic questionnaire, learners were randomly assigned to the control group (N = 62) and experimental group (N = 62). learners' L1 was Bangla, and their ages ranged from 17 to 22 years. They all had exposure to English academically for 12 years, and years of L2 listening study expanded from 2 to 9 years (μ = 4.08 hours). But, currently, their self-listening hour is about 4.33 (μ) hours per week. They used mostly out of the syllabus (66.7%) materials, which were the self-learning materials (75%). For the self-learning materials, they used i) news in English (42%), ii) watching movies in English (42%), iii) listening to English songs (10%), iv) listening to radio programmes in English (1%), v) listening to English speeches, ted-talks or motivational talks (1%), vi) watching various English contents and inspirational video without sub-titles (1%), vii) watching videos with subtitles on YouTube channels or some other modes (1%), viii) effective English learning apps, audiobooks and others (1%) and ix) listening to reading materials like essays and journal articles on reading aloud apps (1%).

Materials

Five transactional listening texts were selected to intervene in five different genres extending 2 to 5 minutes. The objective of L2 listening teaching was clearly defined for both groups. These are decoding processing and meaning-building processing through various activities. Both metacognitive instruction and traditional instruction were conducted using the Zoom platform and Google classroom to keep necessary documents and links. During each session, learners had to spend a few minutes for discussion in breakout rooms and their opinion were stuck on the padlet and instant checking on the Kahoot. Finally, the worksheets were given in Google Forms at the end of the session.

All the related links, forms, materials, and listening texts were kept for learners scheduled for 24 hours.

Table 2

Activities, applications, objectives and other points were followed during the intervention across the groups.

	Experimental Group	Control Group
Course	Listening skill Course	Listening skill Course
Learners	12	12
Objective	Learners will be able to: i) decode what they are listening ii) find specific information, and iii) infer the	Learners will be able to: i) decode what they are listening ii) find specific information, and

	meaning of what is said in the text.	iii) infer the meaning of what is said in the text.
Texts	5	5
Content	Narrative, problem-solving, sorting, Cause and Effect	Narrative, problem-solving, sorting, Cause and Effect
Activities to conduct the class		
Zoom	i) Call and response, ii) providing Instruction as per MI, iii) partner practice in breakout rooms (two times), iv) attendance/ungraded)	i) Call and response, ii) providing Instruction as per product-based or traditional approach iii) attendance/ungraded)
Google Forms	Summative assessment	Summative assessment
Padlet	Open-ended opinion responses	Open-ended opinion responses
Kahoot	Formative assessment	Formative assessment
Flipgrid	Responding to some oral questions	Responding to some oral questions
Deadlines	24 hours after getting the paper	24 hours after getting the paper

Learning management system

There was no proper learning management system (LMS) to administer the whole study for this intervention since teachers and all institutions were not equipped with the system and facilities at the start of the outbreak. Hence, teachers and institutions started applying various permutations and combinations in conducting classes like WhatsApp, Messenger, Skype, Teams, Meet, Zoom, MS word, PDFs, etc. Later, the University Grants Commissions (UGC) Bangladesh managed the Zoom platform more accessible and available to all teachers through their institutes (The Daily Star, 2020).

Asynchronous metacognitive pedagogical sequence task response sheets for L2 listening

Since there was no LMS, learners attended Google forms with activities focusing on two aspects of the process-oriented approach; meaning-building and decoding processing. For the meaning-building processing, two listening sub-skills were checked. They were listening for factual information and listening for inference. For the decoding processing, assimilation was checked. To reinforce these three aspects, item types were multiple-choice questions, true or false, and gap filling. These google forms were scheduled to open before the end of the session so that learners received instructions or clarifications if required. Finally, it remained active for the next 24 hours so that learners could respond. The Google form links were uploaded to the Google classroom site so that learners who missed the sessions could log in and respond at ease within the stipulated time.

Management and assessment

It is worth mentioning here that the researcher controls all the materials, links, time, and scores sent after submitting all the learners. Applying this control over the whole process, sorting student work into completed, late/incomplete, and not submitted categories was possible. By clicking on a student's name, it was possible to quickly scroll through the summarised answers for a subjective assessment of completion and provide appropriate feedback in the feedback function on the screen.

Deadlines

To refrain learners from procrastinating to complete activities and being stagnant in solving the task and activities, deadlines were fixed for all activities within one week for total points.

Metacognitive Awareness Listening Questionnaire (MALQ)

The Metacognitive Awareness Listening Questionnaire is a robust psychometric questionnaire developed by Vandergrift, Goh, Mareschal and Tafagodhtari (2006). The Questionnaire contains 21 statements with five distinct factors related to learners' metacognitive awareness and regulation of listening comprehension strategies; planning and evaluation, person knowledge, problem-solving, directed attention, and mental translation.

Table 3

Five factors and their item numbers of the MALQ (Vandergrift and Goh (2012)).

Five distinct factors of the MALQ.	Statements on the MALQ (item numbers)
Planning and Evaluation	1, 10, 14, 20, 21
Person Knowledge	3, 8, 15
Problem-solving	5, 7, 9, 13, 17, 19
Directed Attention	2, 6, 12, 16
Mental Translation	4, 11, 18

This questionnaire was graded on a six-point Likert scale from Strongly Disagree (1) to Strongly Agree (6) without a neutral point so that respondents could not hedge. It was not a test with right or wrong answers; their forthright and honest responses were important. This questionnaire was administered after the pre-test and post-test at the beginning and the end of the intervention, respectively, of the seven-week intervention.

Pre-test and Post-test

A pre-test at the beginning of the intervention and a post-test at the end of the intervention were conducted to understand the effect of the intervention. Learners of both groups attended the forty-minute tests each time. The tests were designed to gauge the impact of metacognitive instructions on L2 listening comprehension using five texts; four texts to test the top-down processing and one text on the bottom-up processing having thirty-five multiple-choice questions (MCQ). All the selected authentic texts (BBC learning English, 6 minutes English) had the flow of natural speech, real-world conversation, British accent and contemporary subject matters with the appropriate density of the texts based on the learners' level.

4.Results

The main findings followed by the discussion are provided under each research question.

> i) What was the relationship between metacognitive instruction and listening comprehension?

After analysing Pre-test and post-test data, it was found that the mean scores of the post-test of the experimental group were significantly higher than the control group in their factual information, inference, assimilation and overall total scores, and it rejected the null hypothesis ($\mu \neq \mu_0$) and accepted the alternative hypothesis ($\mu = \mu_a$).

Table 4
Pre-test and Post-test scores of the control group and experimental group analysis.

ANOVA						
Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	522.67	1.00	522.67	23.63	0.0001	4.30
Within Groups	486.67	122.00	22.12			
Total	1009.33	123.00				

The twelve learners of the experimental group had a higher mean (μ) of 30.16 (SD = 4.91) during the post-test than that of the twelve learners of the control group mean (μ) of 18.41 (SD = 5.46), whereas their pre-test mean scores (μ) 21.33, (SD= 7.83) and 18.91, (SD= 6.55). Therefore, the effect of the metacognitive instruction was significant, F (1,123) = 23.62, p=.0001. After

analysing the metacognitive awareness listening questionnaire data of both groups, it showed that post-test mean scores of the experimental group were significantly higher in five factors of the MALQ than that of pre-test scores of the same group and both tests of the control group. But, the post-test scores of the control group were either the same or lower than the pre-test scores in the dour factors except for the person knowledge which was equivalent to that of the experimental group in this sample. Hence, analysing both statistics, it was evident that learners of the experimental group performed better after the intervention of metacognitive instruction.

Table 5

Descriptive analysis of five metacognitive awareness listening questionnaire (MALQ) factors across experimental and control groups.

		Experimental Group				Control Group			
		Mean	SD	Max	Min	Mean	SD	Max	Min
Planning and Evaluation	Pre-test	2.30	1.03	3.80	5.60	4.73	1.11	4.00	6.00
	Post-test	5.67	0.60	3.40	6.00	4.03	0.90	3.40	6.00
Directed Attention	Pre-test	2.46	1.38	4.75	6.00	3.71	1.17	3.00	6.00

	Post-test	5.21	0.43	5.25	6.00	3.71	1.17	3.00	6.00
Person Knowledge	Pre-test	2.89	1.00	1.00	3.67	3.83	1.36	2.33	6.00
	Post-test	4.61	1.32	2.67	6.00	4.61	1.32	2.67	6.00
Problem-Solving	Pre-test	4.39	0.50	3.67	5.00	4.36	1.19	4.50	6.00
	Post-test	5.85	0.66	4.17	6.00	3.36	0.58	4.50	6.00
Mental Translation	Pre-test	2.33	0.70	3.33	5.00	3.00	1.46	1.00	4.67
	Post-test	5.44	1.49	1.00	5.00	3.33	1.61	1.00	5.00

ii)   What were the effects of metacognitive instruction on high achievers' and low achievers' listening comprehension?

The effect of metacognitive instruction would be realised by perceiving the Cohen's d effect size of the experimental group where both the low achievers (N = 31) and high achievers (N = 31) received the metacognitive instruction. Hence, two *t-tests* were calculated between the overall MALQ score of pre-and post-test of high achievers and low achievers. The result showed that the *t-test* score of the low achievers, $t(31) = 2.46$, $p = 0.00022$ was

higher than that of the high achievers, $t(31) = 2.04$, $p = 0.00029$. The effect size for both groups was larger than 0.08, which was a large effect size (Cohen, 1988), but low achievers scored higher ($d = 1$) than the high achievers ($d = 0.83$). Therefore, it was evident that metacognitive instruction was effective for this group of learners.

5. Discussion

All learners could operate and respond to the Zoom platform, Google Classroom, Google Forms with listening activities, Flipgrid to record, edit and send the speaking activities, Kahoot for instant responses and Padlet for collaborative discussion successfully within the stipulated time. After the intervention, the experimental group learners were able to respond in English to the meaning-building proceeding activities of two types of items and decoding processing activities. Though designing activities and preparing them applicable on those platforms were time-consuming, it was worth designing for them to access without fail, even offline. Furthermore, transitioning this intervention into an online format was the importance of simplicity in design and switching back and forth between many different platforms (Zoom, Google Forms, Classrooms, Flipgrid, and padlet). To manage learners' accounts, and passwords, troubleshoot problems, assess work, provide feedback, etc., between these platforms, the logistics for learners and time to address these issues seemed additional straining initially. But, no direct complaints from learners in the latter part of the intervention considered it a success. Therefore, minimising the number of applications used in the classroom for synchronous and asynchronous activities would be recommended. The intervention had limited writing opportunities since almost all activities were

on Google Forms. Since core listening activities and small speaking activities attended through Flipgrid were more focused than other skills. There were listening text transcripts for reading in pdf forms to develop and activate formal and content schema. Finally, the scores were scheduled and released weekly.

It was evident from the scores of the descriptive analysis, ANOVA analysis, *t-tests* and Cohen's *d* (1988) analysis that the learners receiving metacognitive instruction outperformed the control group. This confirmed that metacognitive instruction could bring success in L2 listeners even asynchronously and shows significant development of the experimental group in the post-test scores. On the other hand, learners' metacognitive awareness had significant changes, especially in the experimental group. There was also an exponential increase in the five factors of the five factors. It was more clearly and significantly evident in the low achievers' metacognitive awareness. The *t-test* score showed growth in both the experimental group's high and low achievers. But, to maintain the rigour of the analysis of this growth, Cohen's *d* showed a higher effect of metacognitive awareness achieved through metacognitive instruction in low achievers than in high achievers of L2 listening. Therefore, metacognitive instruction is considered for the success of this group of learners in developing their L2 listening performance. However, there would be many scopes for further improvement of these design activities for teaching L2 listening asynchronously.

5. Conclusion

Considering all the findings, it can be said that designing asynchronous online listening activities into seemingly online courses in less ideal circumstances was an efficient and effective endeavour for this study. Hence, this study was evidence of the effect of the metacognitive instruction on L2 listening

comprehension by raising metacognitive awareness asynchronously during the pandemic. It also gave evidence of learners' listening processes and various metacognitive strategies embedded in metacognitive instruction for better comprehension. These findings might positively help learners develop better orchestration of metacognitive strategies while L2 listening, material developers to design effective materials for L2 listening and policymakers to decide on including the various courses. Since there were opportunities to improve it in terms of texts, tasks, mode of instructions, use of application including currently used learning management system (LMS) and so on, it could be obvious to incorporate some elements of online asynchronous teaching L2 listening in addition to regular courses.

Furthermore, these online listening activities could be used to assign listening practice homework using authentic audio and video recordings related to course content and goals designed for specific levels. Again, it could be done outside of class and in-class time for active or communicative activities. Another advantage of this asynchronous metacognitive instruction was that learners could listen to the texts numerous times at their convenience since the sudden transition to online teaching to accommodate teaching during COVID-19 was stressful and challenging. Finally, the interpersonal relationship between the five factors of metacognitive awareness would better understand learners' strategy use marked as a signpost for their development. This total portfolio of their strategy use would lead to being autonomous learners. On the other hand, teachers could record learners' metacognition and guide them to better applications to have successful comprehension. Material developers might also be benefited from this study to develop or revise the existing materials for learners based on their level.

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