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THE INFLUENCED OF LEARNING ANXIETY AND METACOGNITIVE STRATEGIES ON STUDENTS' LISTENING COMPREHENSION ACHIEVEMENT

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ABSTRACT

This study aimed to examine three key areas: (1) whether there was a significant interaction between the application of metacognitive strategies and levels of listening anxiety on students' listening comprehension outcomes; (2) whether students' listening performance varied significantly across different anxiety levels namely high, moderate, and low; and (3) the extent to which specific aspects of listening contributed to overall comprehension achievement. Employing a factorial design that included both experimental and control groups, the study engaged sixty participants equally distributed between the two groups. The experimental group, which received targeted instruction in metacognitive listening strategies, demonstrated marked gains in listening comprehension. A significant interaction effect was identified between metacognitive strategy use and listening anxiety, indicating that the effectiveness of strategy application varied with anxiety levels. Notably, within the experimental group, statistically significant differences in listening performance emerged between students with high and low anxiety, as well as between those with moderate and low anxiety—particularly in the domains of identifying main ideas, recalling details, and drawing inferences. Among the assessed listening components, the ability to grasp details proved to be the strongest predictor of listening comprehension achievement, followed sequentially by identifying main ideas, making inferences, and interpreting the overall message.

Keywords: listening anxiety, metacognitive strategies, listening achievement

1. INTRODUCTION

Basic skill of human since baby is listening, which is an essential skill in learning language. Through auditory engagement, students develop an understanding of the phonetic characteristics, including the articulation of sounds, rhythm, intonation, and stress patterns of individual words prior to verbal production. When listening plays a vital role in communicative competence, as it facilitates the acquisition of various linguistic components such as vocabulary, word stress, syntax, and other aspects that can only be effectively learned through listening (Tran et al., 2024; Hamada, 2019; Nation & Newton, 2020).

Goh & Vandergrift (2021) mentioned that over 40 to 50 % of an individual's time during communication is dedicated to listening. Specifically Spector et al. (2019) stated in interpersonal communication, individuals allocate over 40 to 50% on listening, 25 to 30% on talking, 11 to 16% on reading, and 9% on writing. From both studies, it is realized that listening can help in grasping and comprehending the information from the speaker, improving relationship and learning ability.

Vol 8, No 2 (2025): ESTEEM

Tran et al. (2024) stated that listeners are demanded to distinguish the sounds, stress, intonation, understand the structures and vocabulary, and interpret the input as well as acceptable socio-cultural context of utterances. Listening is regarded as more complicated due to its interrelated skill with receiving, comprehending, recalling, assessing, and replying. So, it is hard to communicate without understanding the input appropriately. Since listening involves the process of constructing meaning from smaller unit into larger on straight approach, the process of decoding sounds to words then link to form phrases and come up to the sentences, is highly suggested to do by the learners to receive a comprehensible input (Thornbury, 2023; Hamada, 2019; Sujiati et al., 2023). In listening comprehension there are two kinds of processes which listeners are usually dominant to. In terms of, top-down" process, listeners can use their prior knowledge to understand the input (message) while in terms of, bottom-up", listeners usually use linguistic knowledge to grasp the message. As addition, Vani and Naik (2023) mentions that communication skills and their quality can develop in line with the improvement of listening ability. Furthermore, it helps learners make a better decision in all aspects. By having the ability to understand vocabulary and accent of the speaker, learners can understand the info.

Being a good listener is one of main concerns to acquire a second or foreign language before continuing next stage on others skills (reading, writing, and speaking). Most teachers nowadays don't pay more attention in teaching listening and speaking, they focus more on improving reading and writing skills. Tzotzou (2019) and Leon et al. (2024) mention most of teachers don't have knowledge of teaching listening skills and don't support by appropriate equipment in school and collages. The instruction of listening comprehension has often been overlooked in teaching and learning process, particularly in Indonesia, despite the fact that listening is a crucial skill in foreign language mastery. Additionally, Anderson and Krathwohl (2019) mentioned that the level of proficiency a person has in using a language including their ability to read, write, speak, or listen to comprehend it.

As a teacher, some grievances on learning a foreign language revealed from students in the class. Some students though anxiety was worrying factor when facing a test that caused their exam's score were low. Fathi, Derakhsan, and Torabi (2020) it was discovered that instruction in listening strategies greatly enhanced students' listening comprehension and reduced their listening anxiety, but didn't have an effect on their self-efficacy. The essential function of listening where learning listening skills are viewed as a developing ability is to overcome the obstacles in listening by assisting speech knowledge. Moreover, some research findings indicates that anxiety had negative effect on teaching and learning process, particularly in students' comprehension.

To reduce anxiety, it needs some relevant strategies. Teacher's role is very crucial part to achieve learning objectives by facilitating and mentoring students with various activities, while students need to expose as much as possible to English. By providing lots of chances to have listening practice teachers can also teach by using suitable listening plans. One of listening approaches that might be applied in listening class is metacognitive strategies. Where, Thu and Yen (2024) mentioned that 50 university freshmen's listening comprehension were enhanced by using metacognitive strategy instruction. But, Nurhayati and Eppang (2023) found the opposite of it, where metacognitive strategies have no correlation with listening comprehension and students' mean score below the minimum completion criteria of school grading system which was 75.

So, this present research, the eleventh graders were chosen because they have less time in English than the tenth graders

whereas they are considered to need more extended time in English since they are going to have the real national exam in the twelfth grade. Based on the information given by the English teacher herself at SMA Negeri 4 Palembang, listening comprehension was scarcely given and practiced to the eleventh graders. The problems came from listening material, listening equipment, and the students themselves. Though the school provided an English lab, they had never been exposed to the lab. The teacher preferred to teach in the class. However, it was also a problem due to the equipment. The school provided teachers with a small portable speaker, students had to adjust to the circumstances, therefore they were less attentive to the audio. The teacher added that students were actually excited to have listening activities in the class, but it became a matter when they were exposed to the native speaker. Students were afraid that they might not understand the passage if it was read only once with the speed and accent of the native speaker, therefore, anxiety toward listening to the passage seemed to be the common experience among EFL students. Lack of vocabulary was also another problem that interfered with students' listening performance.

2. LITERATURE REVIEW

Listening Comprehension

Zulkifli et al. (2022) emphasizes that listening plays a crucial role in language comprehension, as it not only deepens learners' understanding of spoken language but also facilitates imitation in oral communication. In essence, listening comprehension refers to the capacity to grasp spoken language, which encompasses not only understanding the general meaning conveyed in speech but also recognizing individual word meanings and the sounds that constitute spoken utterances. Expanding on this, Tzotzou (2019) defines listening as the ability to interpret linguistic input in spoken texts and derive conclusions, often based on implied meanings that go beyond surface-level interpretation. Listening is thus conceptualized as a dynamic process in which listeners use available linguistic cues and inferential reasoning to construct meaning from what they hear.

However, such a definition tends to understate the significance of individual learner differences that can impact listening outcomes. A growing body of empirical research has demonstrated that several cognitive and affective variables substantially influence listening comprehension. Among these are vocabulary breadth and depth (Cheng & Matthews, 2018; Wallace, 2021; Du & Man, 2022), the types of listening strategies employed (Bozorgian et al., 2021), working memory capacity (Alnajjar et al., 2023; Mekheimer, 2024), and the presence of listening-related anxiety (Adnan et al., 2019; Wang & Cha, 2019; Chen et al., 2023).

Despite numerous studies investigating various factors impacting listening proficiency in recent years, the present research narrows its focus to two specific variables: listening strategies and listening anxiety, both of which are hypothesized to exert considerable influence on learners' listening comprehension.

There are two categories of individual differences based on Goh & Vandergrift (2021) that affect listening comprehension: first, cognitive factors (e.g., linguistics, pragmatics, prior, and metacognitive knowledge, sound discrimination ability, working memory, and L1 listening ability), and second, affective factors (e.g., motivation, anxiety, and self-efficacy). Examining all the factors that mentioned above would be unfeasible, therefore, this present research highlighted on the impact of anxiety on listening comprehension, while teaching and learning process did by using metacognitive strategies, as it significantly affect the ability of language learners to optimize their comprehension processes

Vol 8, No 2 (2025): ESTEEM

Listening Anxiety

Listening has been consistently recognized as a source of anxiety for L2 learners, prompting Leon et al. (2024) to assert that learners typically experience anxiety when engaging with spoken foreign language input.

Learners perceive tasks as overly complex or unfamiliar causes their listening anxiety arises. Several scholars contend that in adequate attention to listening instruction, ineffective pedagogical approaches, and the use of inappropriate or less-effective listening strategies may result on low students' achievement (Zulkifli et al., 2022; Jaya et al., 2025a; Jaya et al., 2025b). Tran et al. (2024) classify the listening anxiety sources into three categories; teachers or learners (lack of motivation, afraid of making mistakes, unfamiliarity of spoken English, and instructor's or teacher's personality), matter and procedure (the properties of language, incomprehensibility input, difficulty level of the material, a paucity of repetition, lack of time elaboration, and assessment in L2), and additional factors (low-quality tools, unpleasant atmosphere, insufficient training, and the absence of pictorial aids). These sources of listening anxiety have the potential to negatively influence students' listening performance. Consequently, the questionnaire employed in this research to assess FLLAS also incorporates these factors.

There are 33 questions in Foreign Language Listening Anxiety Scale questionnaire, adopted from (Delima et al., 2024). Each statement consists of four scale namely strongly disagree, disagree, agree, and strongly agree with the lowest anxiety is 33 and the highest is 132. So, listening anxiety can be categorized as low (33 – 65), moderate (66 – 98), and high (99 – 132). The anxiety causes are grouped into two that are (1) tension/worry which is a situation or process related to the listening apprehension and anxiety, and (2) lack of self-confidence which is related to the experiences of failure in listening activities and also low self-confidence in English learning.

Metacognitives Strategies

Strategies or thinking process that can help students to understand how they learn and control their learning process through planning, monitoring, and evaluating is called meta-cognitive strategy. Some findings indicate that metacognitive strategies influence students' listening comprehension. This significant for both teachers and learners to acknowledge (Firmansyah, 2025; Robillos, 2020, Robillos & Bustos, 2022). The investigation sought to elucidate the effect of cognitive and metacognitive strategies procedure-based on students' comprehension in listening. The result demonstrated not only the efficacy of the intervention but also that strategy training can augment listening comprehension achievement.

In addition, Safa & Motaghi (2024) analyzed these strategies on EFL learners aged 15 to 20 found EFL learners' listening improvement was influenced by meta-cognitive strategies compared to cognitive strategies and EFL students expressed a general preference for metacognitive strategies, perceiving them as informative, innovative, and effective in identifying challenges, enhancing comprehension, and improving preparedness.

In essence, meta-cognitive strategies can be defined as approaches designed to facilitate students in gaining awareness of their cognitive processes during learning. These strategies enable students to concentrate more deliberately, evaluate their prior knowledge in relation to new information, identify errors in their reasoning, and establish methods for efficient learning.

Hypotheses

Ho1 : No statistically significant interaction was found between metacognitive strategies and listening anxiety in relation to

listening comprehension achievement on eleventh graders at SMA Negeri 4 Palembang.

Ha1 : A significant interaction effect was identified between metacognitive strategies and listening anxiety on listening comprehension achievement of eleventh graders at SMA Negeri 4 Palembang.

Ho2 : No statistically significant distinctions on listening comprehension achievement among students who had high, moderate, and low levels of anxiety.

Ha2 : A significant discrepancy in listening comprehension was observed among students who exhibited varying levels of anxiety, categorized as high, moderate, and low.

Ho3 : The aspects of listening comprehension didn't make a significant contribution to the overall listening comprehension achievement.

Ha3 : Listening comprehension components contributed significantly to the overall listening comprehension achievement

3. METHODS

This research used an experimental method where the treatment's impact on the outcome is determined by controlling all other factors that might influence it (Creswell & Creswell, 2018). Next, the researcher applied factorial design where it is an essential method to determine the effects of multiple variables on a response, where this design involved two groups (control group and experimental group). Pre-test and post-test were given to both groups; however, only experimental group was given a treatment. The diagram of factorial design is as follows:

Table 1. Factorial Design Diagram

Experimental Group	O1	X	Y1 Y2 Y3	O2
Control Group	O3	-	Y1 Y2 Y3	O4

(Fraenkel, Wallen, & Hyun, 2012) where:

O1 : Pre-test in Experimental Group

O2 : Post-test in Experimental Group

O3 : Pre-test in Control Group

O4 : Post-test in Control Group

x : a treatment for Experimental Group (metacognitive strategy)

- : No treatment for Control Group

Y1 : Low level anxiety

Y2 : Moderate level of anxiety

Y3 : High level of anxiety

The experimental group received a lot of the treatment for 18 meetings. It was conducted three times a week, with the total number of effective meetings in one semester were 19 weeks. The treatment spent two teaching hours for each meeting to achieve the goal of study. It was sufficient to apply the strategy during two teaching hours. The teaching procedure for the experimental group is as follows:

A. Pre-activities
1. The teacher said hello to students and took attendance.
2. Teacher informed the learning objectives and did some warming up to recall their prior knowledge related to the objectives while preparing the learning materials.

B. Whilst-activities
1. Teacher introduced the lesson then explained the strategies were used.
2. Students were asked to have class discussion related to the learning materials and strategies use before giving the listening exercises. While doing the exercises, teacher used the metacognitive strategies format that were planning/predicting, monitoring, evaluating and problem solving.
   a. Planning/predicting
      Teacher directed students to guess the subject, kind of text and make a guess what possible words and information spoken from the audio. (*Organizing and focused attention)*
      1st Confirmation Step

Vol 8, No 2 (2025): ESTEEM

b. Students listened for the first time and corrected their prediction as imperative to adhere to the stipulated requirements and to take note of the supplementary information provided herein. (*the act of monitoring)*

c. All students worked in pairs to compare what they had written, revised as required, decided what information that still need modified. (*Observing, organizing, and optional attention*)

2nd Confirmation Step

d. All students listened for the second time, then, carefully noticed the disagreement points, revised and put any additional information. (*Monitoring and problem-identification)*

e. Students involved in class discussion. In this section, students shared what they had found by talking about the most important parts of the text and how they found the points. (*Monitoring and evaluation)*

f. At last, students listened again to the audio and compared the information what they had discussed through class discussion, verifying to the transcription of the text. 9*Selective attention and monitoring)*

Reflection Stage

g. Students were proposed to do self-reflection after listening and making a decision what strategies and objectives for the upcoming listening activity. (*Evaluation)*

C. Post-activities

1. Teacher asked students to summarize the lesson, did self-evaluation by giving them homework.
2. Teacher announced a new lesson for the next meeting.

The teaching materials were selected that were adjusted to the curriculum. There were seventeen topics that were going to give in the class. The teaching materials were taken from the various English textbook for the Eleventh Grades.

Table 2. Teaching Learning Materials

Meetings	Topics	Sources
1	**Pre-test**	
2	Introduction to metacognitive strategies	
3	Expressing recommendations	**Mandiri: English on Target 2**
4	Expressing an offer	
5	Asking for and giving opinions	
6	Expressing hopes	
7	Expressing wishes	
8	Respond to invitations	
9	Expressions of personal letters	**Talk Active 2**
10	Expressing an action, event, or activity without mentioning the actor	
11	Listen to an explanation text	
12	Talking about factual report	
13	Listen to a text about living and non-living things	**Pathway to English 2**
14	Listen to a report text about natural and social phenomena	
15	Listen to an analytical exposition text	
16	Listen to a song	
17	Listen to a text about biography	
18	***Post-test***	

There were nine classes of eleventh grade of SMA Negeri 4 Palembang. The classes were divided into two departments; natural and social sciences. The total number of the students were 272 as a population. For the sample of this research 60 students were chosen at random by a lottery after The FLLAS (Foreign Language Listening

Vol 8, No 2 (2025): ESTEEM

Anxiety Scale) questionnaire was given to 129 students from 4 class that were taught by the same teacher. Then, after checking the result, it was found out that 48 students were categorized as high level anxiety, moderate level of anxiety were 55 students and low level anxiety were 26 students, as a result 60 students from each level of anxiety were divided, experimental group consists of 30 students while control group consist of 30 students, that decided by using lottery, those who got odd number belonged to control group, and even number belonged to the experimental group. The number of samples in each group is shown below.

Table 3. Sample

Group	Students Number			Total
	Low	Moderate	High	
Experimental group	10	10	10	**30**
Control group	10	10	10	**30**
Total				**60**

The FLLAS questionnaire was ready- made questionnaires was adopted based on Kim (2000). It consisted of 33 items for each item had 4-point Likert scale (1 = strongly disagree, 2 – disagree, 3 = agree, 4 = strongly agree) with two kinds of causes the anxiety, first tension and worry; and the other is lack of self-confidence. From those scale it was classified into 3 level of anxiety by range from 33 – 65 was Low level of anxiety, 66 – 98 was Moderate level of anxiety, and last, 99 – 132 was High level of anxiety. The FLLAS questionnaire was considered reliable and valid because it was distributed to 238 Korean students with consistency coefficient of .90 by using Cronbach's Alpha, satisfactory (r = .93). internal consistency (r = .91) and test-retest reliability (r = .84) which revealed that the FLLAS questionnaire a reliable measure by nature and across time.

Next, listening test was given to all groups. Students answered a ready-made of National Examination test selected from the year 2010 until 2016 in form of multiple choices. The items covered the teaching materials for the eleventh grades. The researcher used content-validity to find out whether or not the listening test was valid, then it was tried out to students of non-sample. Researcher used SPSS to analyze the data obtained for reliability of the test where the result of alpha Cronbach was 0.887 with r- table = .338 which means that test was reliable. For interpreting individual score, the range of listening achievement used as follows;

Table 4. The Score Range

Raw Score	Convert Score	Category
25 – 30	83 – 100	Excellent
19 – 24	63 – 80	Good
13 – 18	43 – 60	Average
7 – 12	23 – 40	Poor
1 – 6	3 – 20	Very Poor

Last, for data analyzing, researcher used SPSS, after obtained the data from test. Independent sample t-test was used to see the significance difference achievement between experimental and control group after interventions. The alternative hypothesis was accepted if the value of t-obtained was higher than the critical value which significant level was 0.05. Two-ways ANOVA was also used to identify the interaction between independent variable in this study that was metacognitive strategies and moderator variable that was listening anxiety with the dependent variable which was listening comprehension achievement. It was also used to find out the significant differences between the students with high, moderate and low level of anxiety in listening achievement.

Vol 8, No 2 (2025): ESTEEM

4. RESULTS AND DISCUSSION

Both pre-test and post-test were given to experimental and control group, score distribution of listening comprehension test show as follow.

Table 5. The Score Distribution

Raw Score Range	Category	Control Group						Experimental Group					
		Pre-test			Post-test			Pre-test			Post-test		
		f	%	Mean Score	f	%	Mean Score	f	%	Mean Score	f	%	Mean Score
25-30	Very good	-	-	10.53	-	-	14.63	-	-	12.03	1	3.3	17.90
19-24	Good	-	-		2	6.7		-	-		12	40	
13-18	Average	6	20		21	70		13	43.3		15	50	
7-12	Poor	23	76.7		7	23.3		17	56.7		2	6.7	
1-6	Very poor	1	3.3		-	-		-	-		-	-	

Based on Table 5, the control group's pre-test mean score was 10.53, with most students (76.7%) in the poor category. After the post-test, the mean improved to 14.63, with 70% in the average category. Meanwhile, the experimental group's pre-test mean was 12.03, with most students in the poor and average categories. After treatment, their mean score significantly increased to 17.90, with more students moving to the average and good categories. The experimental group outperformed the control group, likely due to the structured use of metacognitive strategies. These strategies helped students by guiding them to predict the content, monitor and revise their understanding, and reflect on their learning process for future improvement.

On other hand, the FLLAS questionnaire were given first to identify their level of anxiety and the result as follow.

Table 6. The Score Distribution of Listening Anxiety

Score Range	Category	F	%	SD	Mean
99 – 132	High	48	37.2	17.34	85.84
66 – 98	Moderate	55	42.6		
33 – 65	Low	26	20.2		
		129	**100**		

On table 6, the mean score was 85.84 with standard deviation 17.34. A total of 26 students (20.2%) experienced a low of listening anxiety, while 55 students (42.6%) experienced a moderate level and 58 students (37.2%) in high level of listening anxiety.

Statistical Analysis

At first, normality and homogeneity test were carried out to determine whether data obtained were normal and homogeneous. Data distribution is considered normal if the p- value is greater than .05, by using Kolmogorov-Smirnov test, and using Levene statistics if p-value was higher than 0.05, were considered homogeneous. The result of both tests showed the significance values were higher than 0.05. First, normality test result showed the significance value of experimental group both pre-test and post-test were .715 and .908 respectively. Then, in control group, the significance value both were .357 in pre- test and .869 in post-test. It means distribution of data was normal. Second, result from Levene statistics showed that in experimental group the significance value was .196 in pre- test and .074 in post-test while control group values were .829 and .420. Since the results were higher than .05, the data were homogeneous.

Vol 8, No 2 (2025): ESTEEM

Paired and Independent Sample t-test Result

Table 7. Paired and Independent Sample Result

Listening Aspect	Mean of Control Group		Mean of Experimental Group		Mean Difference within Groups				Mean difference	t-value and sig.
	Pre	Post	Pre	Post	Control Group	t-value and sig.	Experiment Group	t- value and sig		
Total	10.53	14.63	12.03	17.90	4.1	13.99 .000	5.87	14.25 .000	3.27	4.16 .000
Main Idea	2.40	2.33	2.23	3.03	0.07	0.19 .847	0.8	2.80 .009	.7	1.99 .051
Details	3.87	5.40	5.40	6.47	1.53	4.62 .000	2.37	8.17 .000	1.07	3.38 .001
Inferences	3.60	5.90	5.90	7.07	2.3	5.98 .000	2.4	6.96 .000	1.17	2.04 .45
Understanding Message	0.63	1.03	1.03	1.37	0.4	2.11 .043	.34	1.77 .000	.34	1.68 .097

Table 7 shows a t-value of 14.25 with a significance level of .000, indicating significant improvement in students' listening comprehension. An independent t-test comparing post-test scores between the experimental and control groups revealed a t-value of 4.16 ($p < .05$), confirming a significant difference in favor of the experimental group using metacognitive strategies. Furthermore, stepwise regression analysis in the experimental group showed that all listening aspects significantly contributed to comprehension ($p < .05$), with the detail aspect having the greatest influence.

Table 8. The Contribution of Listening Aspect

Aspect	R^2	R^2 Change	Sig. F Chage
Details	.640	.640	.000
Main Idea	.848	.209	.000
Inferences	.946	.098	.000
Understanding Message	.997	.051	.000

A Two-Way ANOVA was conducted to The analysis revealed a significant interaction between metacognitive strategies and listening anxiety on students' listening comprehension ($p = .045$), particularly in the aspects of details and understanding message. This result led to the rejection of the null hypothesis (H01) and acceptance of the alternative hypothesis (Ha1), confirming that metacognitive strategies can effectively reduce anxiety and improve listening performance, in line with previous studies (Adnan et al., 2019; Wang & Cha, 2019; Chen et al., 2023; Safa & Motaghi, 2024; Thu & Yen, 2024). This found rejected the found from Nurhayati & Eppang (2023). As presented in table 9.

Table 9. Two-way ANOVA Result

Aspect	Basis	Sum Squares Type 3	df	Mean^2	f	Sig
Total	LA*MC	4.90	2	2.45	1.40	.045

Vol 8, No 2 (2025): ESTEEM

Main Idea	LA*MC	6.53	2	3.26	2.30	.109
Details	LA*MC	35.23	2	17.61	4.26	.019
Inferences	LA*MC	1.03	2	.571	.851	.433
Understanding Message	LA*MC	76.63	2	38.31	5.60	.006

Last, to determine if there were big differences in how well students with different level of anxiety understood what they heard, test scores from each group were compared. This was done using independent sample t-test. As was shown below.

Table 10. Aspect of Listening Achievement and Level of Anxiety

Aspects of Listening Comp.	High - Low				High - Moderate				Low - Moderate			
	Mean of High Level	Mean of Low Level	t-value and sig. (2-tailed)	Mean Difference of High and Low Level of Anxiety	Mean of High Level	Mean of Mode-rate Level	t-value and sig. (2-tailed)	Mean Difference of High and Mode- rate Level of Anxiety	Mean of Low Level	Mean of Mode-rate Level	t-value and sig. (2-tailed)	Mean Difference of Low and Mode- rate Level of Anxiety
Listening Total Control Group	14.60	14.80	.175 .863	0.2	14.60	14.50	.068 .947	0.1	14.80	14.50	.255 .801	0.3
Main Idea	2.00	2.60	1.00 .331	0.6	2.00	2.40	.712 .486	0.4	2.60	2.40	.297 .770	0.2
Details	5.30	5.20	.187 .854	0.1	5.30	5.70	.631 .536	0.4	5.20	5.70	.936 .362	0.5
Inferences	6.20	6.10	.118 .907	0.1	6.20	5.40	.682 .504	0.8	6.10	5.40	.635 .533	0.7
Understanding Message	1.10	0.90	.606 .552	0.2	1.10	1.10	.000 1.00	0	0.90	1.10	.606 .552	0.2
Listening Total Experimental Group	15.30	21.00	5.69 .000	5.7	15.30	17.40	2.09 .051	2.1	21.00	17.40	3.11 .006	3.6
Main Idea	3.00	3.80	1.71 .104	0.8	3.00	2.30	1.10 2.84	0.7	3.80	2.30	2.52 .021	1.5
Details	5.90	7.20	2.72 .014	1.3	5.90	6.30	.759 .458	0.4	7.20	6.30	1.92 .070	0.9
Inferences	5.20	8.40	4.13 .001	3.2	5.20	7.60	3.51 .002	2.4	8.40	7.60	1.04 .310	0.8
Understanding Message	1.30	1.60	.805 .431	0.3	1.30	1.20	.305 .764	0.1	1.60	1.20	1.20 .246	0.4

The control group results showed no significant differences in listening comprehension across different levels of listening anxiety, as indicated by high p-values (.863, .947, and .801), supporting the acceptance of Ha2: students without treatment did not perform as well. In contrast, the experimental group showed a significant difference between high and low anxiety levels (t = 5.69, p = .000), and between low and moderate levels (t = 3.11, p = .006). However, no significant difference was found between high and moderate anxiety levels, except in the inference aspect (p = .002). Stepwise regression analysis revealed that all listening aspects significantly contributed to comprehension, with the most impact from "details," followed by "main idea" and "inferences," likely due to the effectiveness of metacognitive strategies like predicting and monitoring. The "understanding message" aspect had the lowest contribution, possibly because it required more focus on grasping overall meaning in short passage.

DISCUSSION

The findings of this study indicate that the application of metacognitive strategies significantly enhances students' listening comprehension. This is evidenced by the considerable improvement in the post-test scores of the experimental group, which received metacognitive strategy training, compared to the control group. The experimental group's mean score increased from 12.03 to 17.90, while the control group only increased from 10.53 to 14.63. This suggests that metacognitive strategies such as planning before listening, monitoring during listening, and evaluating after listening help students become more aware of their listening processes and enable them to better understand spoken texts. These results support previous research by Mazari

(2025), who emphasized that learners with strong metacognitive awareness perform better in listening comprehension tasks, and Kusmaryono et al. (2024), who noted that strategy training allows learners to effectively manage their cognitive resources.

Furthermore, analysis of specific listening aspects showed that the ability to identify details contributed most significantly to listening comprehension (R^2 = .640). This implies that metacognitive strategies particularly help students focus on specific information, filtering out irrelevant content during the listening process. Meanwhile, understanding the message of a text showed the smallest contribution (R^2 change = .051), possibly due to the more complex cognitive demands required to synthesize and interpret the overall meaning of spoken discourse. These findings align with the work of Graham and Macaro (2008), who found that strategy-based instruction enhances learners' ability to attend to important information, and Field (2008), who pointed out that understanding global meaning is a higher-level skill that develops gradually over time.

In addition to comprehension outcomes, the study also investigated the role of listening anxiety. The majority of students reported moderate to high levels of anxiety, with a mean score of 85.84. While the control group showed no significant performance differences across anxiety levels, the experimental group demonstrated a clear advantage among students with low anxiety. Those who received metacognitive strategy instruction and experienced low anxiety performed significantly better than their high-anxiety counterparts. This supports the findings of Gopal et al. (2021), who stated that listening anxiety can hinder comprehension, and Bahufite et al. (2023), who suggested that metacognitive instruction reduces anxiety by increasing learners' control over their listening experience.

Moreover, the interaction between metacognitive strategies and anxiety was statistically significant, particularly for the aspects of identifying details and understanding the message. This suggests that metacognitive strategies not only improve cognitive performance but also play an emotional regulatory role by reducing the negative impact of anxiety on listening comprehension. These findings echo those of Febriyanti (2023), who argue that learners who develop metacognitive awareness are better able to manage the affective challenges associated with listening tasks. However, the inference aspect did not show a significant interaction, possibly due to the fact that inference requires more than strategy use it also demands background knowledge and vocabulary, as supported by (Lesiana et al., 2023).

In conclusion, this study provides strong evidence that metacognitive strategies are effective in enhancing students' listening comprehension and reducing the effects of listening anxiety. Students trained in these strategies were better equipped to understand details, draw inferences, and grasp the overall meaning of listening texts. More importantly, metacognitive instruction appeared to buffer the detrimental effects of anxiety, thereby fostering both academic performance and emotional well-being. These findings support the broader view that metacognitive strategies empower learners to become self-regulated and resilient in the face of complex language tasks.

5. CONCLUSION

Based on the data analysis, three main conclusions were drawn. First, a significant interaction was found between the use of metacognitive strategies and students' levels of listening anxiety on listening comprehension achievement, as indicated by a significance value of 0.045 ($p < 0.05$). Second, significant differences in listening comprehension were observed between students with high and low anxiety, as well as moderate and low anxiety, within the experimental group. This suggests that lower anxiety levels, when paired with the use of metacognitive strategies, led to better listening performance. Third, the stepwise regression analysis revealed that the details aspect contributed the most to listening achievement, followed by main ideas, inferences, and message understanding.

Recommendations for future research include expanding the participant pool across different educational levels and incorporating additional variables such as self-efficacy, learning motivation, and working memory

capacity. Future studies may also explore the integration of digital tools or interactive media in metacognitive strategy instruction to examine their impact on reducing listening anxiety and enhancing comprehension more effectively.

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Vol 8, No 2 (2025): ESTEEM

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