

Enhancing Learning Outcomes through Self-Regulated Learning: A Study of Listening Comprehension, Motivation, and Metacognitive Awareness

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Listening comprehension represents a fundamental component of language acquisition and is influenced by learners' ability to regulate their learning strategies, sustain motivation, and develop metacognitive awareness. This study examined the influence of self-regulated learning on listening comprehension while also investigating the mediating roles of motivation and metacognitive awareness. Adopting a quantitative, cross-sectional, correlational research design, the study collected data from 250 EFL/ESL learners through a structured questionnaire. Mediation analysis was conducted using SPSS PROCESS Model 4. The findings revealed strong positive relationships between self-regulated learning and listening comprehension ($r = .830$), motivation and listening comprehension ($r = .851$), and metacognitive awareness and listening comprehension ($r = .847$). Furthermore, the mediation analysis supported a partial mediation model, demonstrating statistically significant indirect effects through both motivation ($\beta = .2470$; $p < 0.01$) and metacognitive awareness ($\beta = .2926$; $p < 0.01$). These results indicate that self-regulated learning contributes to improved listening comprehension not only through its direct influence but also by strengthening learners' motivation and metacognitive awareness. The findings emphasise the value of strategy-oriented listening instruction and highlight the importance of fostering learner autonomy to cultivate independent and effective listeners. Nevertheless, the cross-sectional nature of the research limits the ability to establish causal relationships.

Keywords: Self-Regulated Learning; Listening Comprehension; Motivation; Metacognitive Awareness; EFL/ESL Learners

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Introduction

Background of the Study

Listening comprehension constitutes a core competency in second and foreign language acquisition, requiring learners to process spoken input, construct meaning, and respond appropriately as communication unfolds. However, successful listening extends beyond linguistic proficiency, demanding that learners regulate their attention, employ appropriate strategies, monitor their understanding, and evaluate their own performance throughout the listening process. Consequently, recent research in second language learning has increasingly recognised self-regulated learning as a valuable framework for explaining how learners manage the cognitive, motivational, and metacognitive processes involved in language learning tasks (Lin Sophie Teng 2022).

Within listening activities, learners who effectively apply self-regulated learning strategies are more likely to engage in pre-listening preparation, sustain concentration during listening, and critically evaluate their performance after completing the task, unlike learners who lack such regulatory approaches. Supporting this perspective, Zhou and Rose (2021) reported that improvements in listening proficiency were associated with a comprehensive self-regulatory cycle involving preparation, strategic behaviour, self-efficacy, and post-task reflection. Similarly, Chon and Shin (2019) found that academic motivation and metacognitive awareness operate in combination to facilitate successful second-language listening performance.

Problem Statement

Despite the growing body of research on self-regulated learning, many EFL/ESL learners still encounter considerable difficulties in listening comprehension because they often approach listening as a passive activity rather than actively planning, monitoring, and evaluating their comprehension. Although previous studies have identified a range of psychological and strategic factors that influence listening performance, limited research has integrated self-regulated learning, motivation, metacognitive awareness, and listening comprehension within a single conceptual framework. Yo In'nami (2023) reported a significant association between metacognitive awareness and second-language listening comprehension, while emphasising the need for further empirical evidence to clarify how metacognitive awareness interacts with motivational factors.

Likewise, Vonkova et al. (2021) highlighted persistent methodological and contextual limitations in EFL motivation research, particularly regarding diverse learner populations and language skill-specific outcomes such as listening comprehension. Furthermore, Brett Milliner (2024) observed that metacognitive interventions do not benefit all learners equally, with lower-

proficiency students showing comparatively limited improvements in listening performance. They therefore recommended further investigation into learners' motivation and metacognitive awareness as potential explanatory mechanisms underlying listening success. Addressing these research gaps, the present study examines the direct influence of self-regulated learning on listening comprehension while also exploring its indirect effects through motivation and metacognitive awareness.

Aim and Research Objectives

This study investigates the influence of self-regulated learning on listening comprehension among language learners, with particular emphasis on the mediating roles of motivation and metacognitive awareness. To achieve this objective, the study addresses the following research questions:

- To examine the relationship between self-regulated learning and listening comprehension among EFL/ESL learners.
- To investigate the effects of self-regulated learning on learners' motivation and metacognitive awareness.
- To determine whether motivation and metacognitive awareness mediate the relationship between self-regulated learning and listening comprehension.

Significance of the Study

The present study is significant because it offers a comprehensive understanding of listening achievement by integrating self-regulated learning, motivation, metacognitive awareness, and listening comprehension within a unified conceptual framework. From a theoretical perspective, it extends the literature on second-language learning by clarifying how self-regulated learning influences listening outcomes through underlying psychological and metacognitive processes. From a practical standpoint, the findings provide valuable insights for educators in designing listening instruction that encourages learners to establish learning goals, monitor their comprehension, maintain motivation, and evaluate the effectiveness of their listening strategies. Such instructional practices can foster greater learner autonomy, reflective thinking, and more effective language learning.

Literature Review

This literature review critically examines recent scholarly work on self-regulated learning, listening comprehension, motivation, and metacognitive awareness within the context of language learning. The review is organised according to the study's three research objectives, providing a systematic synthesis of the relevant literature before presenting the theoretical framework and identifying the research gaps that underpin the present study.

Self-Regulated Learning and Listening Comprehension

Self-regulated learning has gained considerable attention in second and foreign language education because it explains how learners actively manage their own learning rather than depending exclusively on teacher guidance. Learners who demonstrate strong self-regulatory abilities typically establish learning goals, organise learning activities, select appropriate strategies, monitor their progress, maintain attention, and evaluate their performance throughout the learning process. These capabilities are especially important for listening comprehension, as listening requires the simultaneous processing of spoken sounds, vocabulary, grammatical structures, meaning, speaker intentions, and contextual information.

Unlike reading, where learners can revisit previously encountered text, listening generally occurs in real time, leaving little opportunity to review missed information. Consequently, effective listening relies heavily on learners' capacity for strategic regulation during the comprehension process. Lin Sophie Teng (2022) argued that self-regulated learning has become a central concept in second and foreign language education because it enables learners to apply strategic learning behaviours effectively across language tasks. Their perspective suggests that listening comprehension is strengthened when learners engage actively in planning, monitoring, evaluating, and reflecting on their listening rather than participating as passive recipients of spoken input.

A growing body of empirical evidence further highlights the contribution of self-regulated learning to listening development. Investigating students transitioning from secondary education to an English-medium instruction university, Zhou and Rose (2021) found that learners needed to adapt quickly to longer, less structured, and more demanding academic listening tasks. Their findings indicated that successful listening depends not only on linguistic competence but also on learners' ability to plan, monitor comprehension, modify strategies when necessary, and reflect on their performance. Similarly, (Abdolrezaipoor & Ghanbari, 2021) reported that self-regulation-oriented dynamic assessment enhanced both listening comprehension and learners' self-regulatory abilities among EFL students. Their study demonstrated that integrating assessment with instructional practices that encourage learners to monitor and regulate their own learning processes can significantly improve listening performance.

More recently, Cai and Yu (2024) showed that learners' perceptions of their own learning needs mediated the relationship between self-regulated learning and learning outcomes in an EFL listening course. Their results suggest that recognising individual listening needs promotes greater engagement in self-regulatory behaviours, which subsequently enhances listening achievement. Collectively, these studies demonstrate that self-regulated learning extends beyond a general academic competency and plays a direct and essential role in

listening comprehension by enabling learners to consciously regulate both cognitive and metacognitive processes throughout listening activities.

Self-Regulated Learning, Motivation, and Metacognitive Awareness

The second research question examines the influence of self-regulated learning on learners' motivation and metacognitive awareness. Motivation is a fundamental component of self-regulated learning because the effective application of self-regulatory strategies requires sustained effort, persistence, and a willingness to continue despite difficulties. Although learners may possess knowledge of effective listening strategies, consistent implementation of these strategies is unlikely without sufficient motivation. Guo et al. (2023) found that motivational beliefs significantly influenced both self-regulated learning and English language achievement, identifying motivation and grit as key determinants of learners' strategic engagement. This relationship is particularly relevant to listening comprehension, where learners frequently encounter anxiety, frustration, and perceived difficulty when processing spoken input. Learners with stronger motivation are more likely to persevere through challenging listening tasks, repeat listening activities, refine their strategies, and actively seek opportunities to improve rather than abandoning difficult learning situations.

Metacognitive awareness represents another essential dimension of self-regulated learning, referring to learners' understanding and regulation of their own cognitive processes during learning. Within listening comprehension, metacognitive awareness encompasses activities such as planning before listening, establishing listening objectives, monitoring comprehension while listening, identifying breakdowns in understanding, selecting appropriate problem-solving strategies, and evaluating performance after the listening task has been completed. Chon and Shin (2019) demonstrated that both metacognitive awareness and academic motivation contributed significantly to distinguishing successful second-language listeners from less successful ones. Their findings suggest that effective listening performance arises not solely from linguistic competence but from the combined influence of motivational and metacognitive factors. Supporting this perspective, Yo In'nami (2023), using meta-analytic structural equation modelling, confirmed a significant association between metacognitive awareness and second-language listening comprehension. Their findings reinforce the importance of considering metacognitive awareness as a key explanatory construct in research on listening performance.

The relationship among self-regulated learning, motivation, and metacognitive awareness can be viewed as mutually reinforcing. Learners who actively regulate their learning are more likely to develop stronger metacognitive awareness because they habitually engage in planning, monitoring, and evaluating their learning processes. At the same time, motivation provides the psychological drive needed to sustain these self-

regulatory behaviours over time. Al-Khresheh and Alruwaili (2024) emphasised the importance of metacognition in listening comprehension, arguing that successful listeners must be capable of both understanding and regulating the strategies they employ during listening tasks. Accordingly, self-regulated learning is likely to improve listening comprehension not only through the direct application of effective learning strategies but also by strengthening learners' motivation and enhancing their metacognitive control throughout the listening process.

Motivation and Metacognitive Awareness as Mediators between Self-Regulated Learning and Listening Comprehension

The third objective of this study is to examine whether motivation and metacognitive awareness mediate the relationship between self-regulated learning and listening comprehension. Adopting a mediation perspective is appropriate because the influence of self-regulated learning on listening achievement may not occur solely through a direct pathway. Instead, its effects are likely to operate through learners' internal psychological processes, particularly motivation and metacognitive awareness. Learners who engage in self-regulated learning often develop stronger feelings of competence and control over their learning, which can enhance their motivation. Increased motivation may subsequently encourage greater persistence, more frequent listening practice, and sustained engagement with challenging listening tasks, ultimately leading to improved listening comprehension. Ryan and Deci (2020) argued that learners experience stronger motivation when they perceive autonomy, competence, and meaningful involvement in the learning process. Within listening instruction, self-regulated learning supports these conditions by enabling learners to assume greater responsibility for setting goals, selecting strategies, and monitoring their progress.

Metacognitive awareness may also function as an important mediating mechanism because self-regulated learning encourages learners to reflect systematically on their learning experiences. By setting objectives, planning learning activities, monitoring comprehension, and evaluating outcomes, learners become increasingly aware of their listening processes and strategic behaviours. This heightened awareness can improve listening performance by enabling learners to identify comprehension difficulties more accurately and implement appropriate corrective strategies. Brett Milliner (2024) found that metacognitive interventions improved listening comprehension and listening self-efficacy among lower-proficiency EFL learners; however, the magnitude of these improvements varied according to learners' proficiency levels and the instructional context. Their findings suggest that although metacognitive awareness contributes to listening success, its development is neither automatic nor uniform and should be fostered through instructional practices that address learners' authentic listening needs.

The mediating roles of motivation and metacognitive awareness are further supported by broader reviews of self-regulated learning in second-language education. Ruofei Zhang (2024), in their review of self-regulated second-language learning, highlighted the importance of strategy use, teacher support, and pedagogical approaches in enabling learners to regulate their language learning effectively. Their review indicates that self-regulated learning influences language outcomes through multiple learner-centred mechanisms, including strategy awareness, motivation, and engagement. Similarly, Ueno et al. (2025) reviewed research on self-regulated learning in second and foreign language education and reported increasing scholarly attention to the cognitive, motivational, behavioural, and environmental processes through which learners regulate their learning. Collectively, these studies provide strong theoretical support for an integrated framework in which self-regulated learning predicts listening comprehension through both direct pathways and indirect pathways mediated by motivation and metacognitive awareness.

Theoretical Framework

Two theoretical perspectives underpin the present study: Self-Regulated Learning Theory and Self-Determination Theory. Self-Regulated Learning Theory conceptualises learning as an active process in which learners establish goals, select and implement strategies, monitor their progress, and evaluate their performance. Within the context of this research, the theory provides the foundation for the proposition that self-regulated learning can enhance listening comprehension. Learners who actively plan, monitor, and evaluate their listening processes are better equipped to manage the complexities associated with understanding spoken language. Lin Sophie Teng (2022) presented a contemporary framework illustrating the application of self-regulated learning within second and foreign language education, while Zhou and Rose (2021) demonstrated its relevance to self-regulated listening in academic English-medium instructional environments.

Self-Determination Theory is equally relevant because motivation is examined as a mediating variable in this study. Ryan and Deci (2020) proposed that motivation is fundamentally shaped by the fulfilment of three psychological needs: autonomy, competence, and relatedness, distinguishing between more self-determined and more controlled forms of motivation. In the present context, self-regulated learning is expected to strengthen learners' motivation by increasing their sense of autonomy and competence through goal setting, strategic learning, and self-evaluation. Enhanced motivation is, in turn, likely to improve listening comprehension by encouraging greater persistence, sustained effort, and active engagement with listening tasks. Collectively, these theoretical perspectives explain both the strategic and motivational mechanisms through which self-regulated learning may contribute to improved listening achievement.

Literature Gap

Although existing research has established significant relationships among self-regulated learning, motivation, metacognitive awareness, and listening comprehension, several important gaps remain in the literature. First, the majority of previous studies have examined only isolated relationships between these constructs, such as the association between self-regulated learning and listening achievement or between metacognitive awareness and listening performance, rather than evaluating an integrated model that incorporates all of these variables simultaneously. Second, compared with other language skills, particularly reading and writing, listening comprehension has received comparatively limited attention within self-regulated learning research. Third, while motivation and metacognitive awareness are widely recognised as influential learner characteristics, relatively few empirical studies have investigated their mediating roles in explaining the relationship between self-regulated learning and listening comprehension. Finally, existing evidence suggests that the effectiveness of self-regulatory processes may vary according to learner proficiency, educational context, and instructional conditions, highlighting the need for further empirical investigation within EFL/ESL settings. To address these limitations, the present study examines both the direct effect of self-regulated learning on listening comprehension and its indirect effects through the mediating roles of motivation and metacognitive awareness.

Research Methodology

This section outlines the methodological procedures employed to investigate the relationships among self-regulated learning, motivation, metacognitive awareness, and listening comprehension. It describes the research approach and design, the instruments used for data collection, the procedures adopted for data analysis, and the ethical considerations observed throughout the study to ensure methodological rigour and maintain research integrity.

Research Method and Research Design

A quantitative research approach was adopted because the study sought to measure the relationships among clearly defined variables, namely self-regulated learning, motivation, metacognitive awareness, and listening comprehension. This approach is appropriate when research aims to collect numerical data, test predefined hypotheses, and apply statistical techniques to determine the direction and strength of relationships between variables. Bloomfield and Fisher (2019) noted that quantitative research is particularly suitable for studies requiring systematic measurement, objective interpretation of findings, and statistical comparison of data. Accordingly, this approach provides an appropriate framework for examining whether self-regulated

learning predicts listening comprehension and whether this relationship is mediated by motivation and metacognitive awareness.

The study employed a cross-sectional, correlational, and explanatory research design. A cross-sectional design was considered appropriate because data were collected from participants at a single point in time rather than across an extended period. This enabled the researcher to examine the existing levels of self-regulated learning, motivation, metacognitive awareness, and listening comprehension among the participants. The correlational component of the design focused on identifying associations among these variables without manipulating any learning conditions or introducing experimental interventions. In addition, the explanatory nature of the research extended beyond describing relationships by investigating both the direct and indirect effects among the study variables. This methodological approach is consistent with recent quantitative research in language learning that explores the influence of psychological and metacognitive factors on English language achievement (Guo et al., 2023). Furthermore, the study followed a deductive research strategy, whereby hypotheses derived from the existing literature were empirically tested using the collected quantitative data.

The target population comprised EFL/ESL learners, particularly university students and secondary-level learners studying English. A sample of approximately 250 participants was selected, providing an adequate size for conducting both correlation and mediation analyses involving multiple variables. Where participants represented different academic levels, stratified random sampling was employed to ensure balanced representation across the various groups. However, when the research was conducted within a specific language-learning context, purposive sampling was considered appropriate to recruit participants whose characteristics aligned closely with the objectives of the study.

Data Collection

The study utilised a structured questionnaire as the primary instrument for data collection. The questionnaire was designed to measure three principal constructs: self-regulated learning, motivation, and metacognitive awareness. The self-regulated learning scale comprised items related to goal setting, planning, monitoring, strategy use, and self-evaluation. These dimensions are particularly relevant to listening because effective self-regulated listening requires learners to prepare for listening tasks, monitor their comprehension, modify strategies when necessary, and evaluate their performance upon task completion. Zhou and Rose (2021) demonstrated that self-regulated listening becomes especially important when learners transition to more demanding English-medium instructional environments, where they are expected to assume greater responsibility for managing their own listening processes.

The motivation scale assessed intrinsic motivation, extrinsic motivation, learning interest, and persistence. Including motivation in the study was

considered essential because learners with higher levels of motivation are generally more likely to continue practising, apply effective learning strategies consistently, and remain engaged despite experiencing comprehension difficulties. Guo et al. (2023) reported that motivation plays a significant role in promoting both self-regulated learning and English language achievement, supporting its inclusion as a key construct in the present research. Metacognitive awareness was measured using a scale encompassing planning, monitoring, problem-solving, directed attention, and evaluation. These dimensions are particularly appropriate for listening comprehension because successful listening depends not only on understanding spoken input but also on learners' ability to recognise comprehension difficulties and regulate their responses during the listening process. Chon and Shin (2019) found that both metacognitive awareness and academic motivation were significant factors distinguishing successful second-language listeners.

Listening comprehension was assessed using a standardised or teacher-validated listening test to obtain an objective measure of learners' listening performance. The inclusion of a performance-based assessment was necessary because the dependent variable should reflect actual listening ability rather than learners' self-perceptions of their listening competence. Abdolrezaپour and Ghanbari (2021) similarly employed listening comprehension assessments in their investigation of the relationship between listening performance and self-regulated learning. By combining questionnaire data with the results of a listening test, the present study achieved a more comprehensive evaluation, capturing both the psychological characteristics of learners and their actual listening performance.

Data Analysis Method

All collected data were analysed using Statistical Package for the Social Sciences (SPSS). The analysis began with a data screening process to ensure the quality and suitability of the dataset for subsequent statistical analyses. This preliminary stage involved identifying missing values, detecting outliers, assessing the normality of data distributions, evaluating response quality, and examining the potential presence of common method bias. As questionnaire-based studies are particularly susceptible to common method bias, both procedural and statistical remedies were employed to reduce the possibility that observed relationships reflected measurement artefacts rather than genuine associations among the study constructs (Jordan & Troth, 2019).

Following data screening, descriptive statistical analyses were performed. For each principal variable, the mean, standard deviation, minimum value, maximum value, skewness, and kurtosis were calculated and reported. These statistics provided an overview of participants' levels of self-regulated learning, motivation, metacognitive awareness, and listening comprehension. The next stage involved evaluating the reliability of the measurement instruments. Internal consistency was assessed using Cronbach's Alpha and

Composite Reliability, with coefficients exceeding 0.70 regarded as acceptable. Joseph F. Hair Jr. (2021) emphasised that establishing the reliability and validity of measurement instruments is a prerequisite for accurately examining structural relationships among latent constructs.

The fourth stage consisted of Pearson correlation analysis to determine the initial relationships among the variables included in the study. Subsequently, mediation analysis was conducted to examine whether motivation and metacognitive awareness mediated the relationship between self-regulated learning and listening comprehension. This analytical approach was considered appropriate because previous research has demonstrated a strong association between metacognitive awareness and second-language listening comprehension (Yo In'nami, 2023). Accordingly, the analysis evaluated both the direct effect of self-regulated learning on listening comprehension and its indirect effects operating through motivation and metacognitive awareness.

Ethical Consideration

Throughout the study, strict ethical principles were observed to ensure the rights and well-being of all participants. Prior to data collection, participants were provided with clear information regarding the title, objectives, and nature of the research. They were informed that participation was entirely voluntary and that they had the right to withdraw from the study at any stage without facing any penalty or negative consequences. Participant anonymity and confidentiality were maintained by avoiding the collection of unnecessary personal information. All collected data were used exclusively for academic purposes and stored securely to protect participants' privacy. In addition, both the questionnaire and the listening test were administered under fair and impartial conditions, ensuring that participants were neither subjected to pressure nor placed in situations that could cause discomfort or distress.

Data Analysis

This chapter presents the statistical analysis of data collected from the 250 participants included in the study. The analysis comprises participants' demographic characteristics, reliability assessment, normality testing, correlation analysis, and regression analysis conducted using PROCESS Model 4. The primary objective of this chapter is to examine the relationships among self-regulated learning, motivation, metacognitive awareness, and listening comprehension, as well as to determine whether motivation and metacognitive awareness mediate the relationship between self-regulated learning and listening comprehension.

Demographic Profile of Respondents

The demographic analysis summarised the characteristics of the participants involved in the study. The sample was evenly distributed by

gender, comprising 125 male respondents and 125 female respondents, with each group representing 50.0% of the total sample. This balanced gender distribution enhances the representativeness of the findings by ensuring that the perspectives of both male and female learners are equally reflected. With respect to age, the largest proportion of participants fell within the 21–23 years’ age group, accounting for 32.8% of the sample. Participants aged over 26 years constituted 24.4% of the respondents, while those aged 24–26 years represented 21.6%. The youngest group, comprising learners aged 18–20 years, accounted for 21.2% of the sample. These results indicate that the study included learners across a range of age groups, although young adults formed the largest segment of the participant population.

Table 1

Frequency Distribution of Demographic Characteristics			
Demographic Variable	Category	Frequency	Percent
Gender	Male	125	50.0
	Female	125	50.0
	Total	250	100.0
Age	18–20	53	21.2
	21–23	82	32.8
	24–26	54	21.6
	Above 26	61	24.4
	Total	250	100.0
Academic Level	Secondary Level	56	22.4
	Diploma/Foundation	60	24.0
	Undergraduate	66	26.4
	Postgraduate	68	27.2
English Learning Background	Total	250	100.0
	EFL Learner	127	50.8
	ESL Learner	123	49.2
English Learning Duration	Total	250	100.0
	Less than 1 Year	94	37.6
	1–3 Years	77	30.8
	4–6 Years	79	31.6
Listening Practice Frequency	Total	250	100.0
	Once a Week	87	34.8
	2–3 times a Week	82	32.8
	4–5 times a Week	81	32.4
	Total	250	100.0

The participants were also relatively well distributed across different academic levels. Postgraduate students constituted the largest group, representing 27.2% of the sample, followed by undergraduate students at 26.4%. Diploma or foundation students accounted for 24.0%, while secondary-level students comprised the remaining 22.4%. This distribution indicates that learners from a broad range of educational backgrounds participated in the study, thereby enhancing the applicability of the findings across diverse language-learning contexts. In terms of English language learning background, 50.8% of the respondents were English as a Foreign Language (EFL) learners, whereas 49.2% were English as a Second Language (ESL) learners. The nearly

equal representation of these two groups ensured that both foreign-language and second-language learning environments were adequately reflected in the sample.

Regarding participants’ experience in learning English, 37.6% had studied English for less than one year, 30.8% had between one and three years of learning experience, and 31.6% had been learning English for four to six years. Similarly, the frequency of listening practice was distributed fairly evenly among the respondents. Approximately 34.8% reported practising listening once a week, 32.8% practised two to three times per week, and 32.4% engaged in listening practice four to five times weekly. Collectively, these distributions indicate that the sample represented learners with varied educational backgrounds, language-learning experiences, and listening practice habits.

Reliability Analysis

Reliability analysis was performed using Cronbach’s Alpha to evaluate the internal consistency of the measurement scales included in the questionnaire. As presented in Table 2, the Cronbach’s Alpha coefficients for all four constructs exceeded the recommended threshold of 0.70, indicating satisfactory reliability. The self-regulated learning scale produced a Cronbach’s Alpha coefficient of .845, while the values for motivation, metacognitive awareness, and listening comprehension were .844, .839, and .832, respectively. These findings demonstrate that all four measurement scales possess strong internal consistency, confirming that the questionnaire items reliably measured their respective constructs.

The reliability results indicate that the questionnaire demonstrated adequate internal consistency, supporting its suitability for subsequent statistical analyses. Among the four constructs, self-regulated learning achieved the highest reliability coefficient, suggesting that the eight items measuring goal setting, planning, monitoring, strategy use, and self-evaluation consistently assessed the intended construct. Similarly, the motivation and metacognitive awareness scales exhibited high levels of reliability, indicating that the items related to learners’ interest, persistence, planning, monitoring, and problem-solving measured their respective constructs in a coherent and consistent manner. The listening comprehension scale also produced a satisfactory reliability coefficient, demonstrating that the items used to assess participants’ perceived listening ability were appropriate and reliable for the purposes of this study.

Table 2
Reliability Analysis of Study Variables

Scale	Cronbach’s Alpha	Number of Items	Interpretation
Self-Regulated Learning	.845	8	Reliable
Motivation	.844	8	Reliable
Metacognitive Awareness	.839	8	Reliable
Listening Comprehension	.832	8	Reliable

Normality Analysis

The normality of the data was assessed using the Kolmogorov–Smirnov and Shapiro–Wilk tests. As shown in Table 3, all four variables produced significance values of .000 in both tests. Since these values are below the threshold of .05, the null hypothesis of normality was rejected, indicating that the data did not follow a normal distribution. Accordingly, the distributions of self-regulated learning, motivation, metacognitive awareness, and listening comprehension did not satisfy the assumption of normality.

Given the significant results obtained from the normality tests, Spearman’s rho correlation was employed in place of Pearson’s correlation coefficient. Spearman’s rho is more appropriate when data deviate from a normal distribution and when variables are measured using ordinal Likert-scale responses. Although the assumption of normality was not satisfied, the sample size of 250 participants was sufficiently large to support regression and mediation analyses. Furthermore, the mediation analysis conducted using PROCESS incorporated bootstrapping with 5,000 resamples, thereby generating more robust confidence intervals for the estimated indirect effects and enhancing the reliability of the mediation results.

Table 3

Tests of Normality

Variable	Kolmogorov-Smirnov Statistic	df	Sig.	Shapiro-Wilk Statistic	df	Sig.
Self-Regulated Learning	.126	250	.000	.946	250	.000
Motivation	.105	250	.000	.945	250	.000
Metacognitive Awareness	.119	250	.000	.938	250	.000
Listening Comprehension	.121	250	.000	.939	250	.000

Correlation Analysis

Correlation analysis was conducted to examine both the strength and direction of the relationships among the principal study variables. As presented in Table 4, self-regulated learning exhibited strong, positive, and statistically significant associations with motivation, metacognitive awareness, and listening comprehension. The strongest relationship was observed between self-regulated learning and motivation ($r = .855$, $p < .01$), indicating that learners with higher levels of self-regulated learning were also more likely to report greater motivation. In addition, self-regulated learning demonstrated a strong positive correlation with listening comprehension ($r = .830$, $p < .01$), suggesting that learners who actively engaged in planning, monitoring, and evaluating their learning generally achieved higher levels of listening comprehension.

The second regression model examined the effect of self-regulated learning on metacognitive awareness. As presented in Table 6, the regression model was statistically significant, $F(1, 248) = 575.6724, p < .001$, explaining 69.89% of the variance in metacognitive awareness ($R^2 = .6989$). The analysis further revealed that self-regulated learning was a significant positive predictor of metacognitive awareness ($\beta = .8269, p < .001$). These findings indicate that learners who exhibit higher levels of self-regulated learning are also more likely to possess stronger metacognitive awareness, reflecting a greater capacity to plan, monitor, and evaluate their listening processes.

Table 6
Regression Analysis Predicting Metacognitive Awareness from Self-Regulated Learning

Predictor	Coefficient	SE	t	p	LLCI	ULCI
Constant	.5365	.1229	4.3638	.0000	.2944	.7787
Self-Regulated Learning	.8269	.0345	23.9932	.0000	.7590	.8947
Model Summary: $R = .8360, R^2 = .6989, F = 575.6724, p = .0000$.						

The third regression model evaluated the combined contributions of self-regulated learning, motivation, and metacognitive awareness to listening comprehension. As reported in Table 7, the overall regression model was statistically significant, $F(3, 246) = 280.7730, p < .001$, accounting for 77.40% of the variance in listening comprehension ($R^2 = .7740$). The results indicated that self-regulated learning continued to be a significant positive predictor of listening comprehension even after the inclusion of the two mediating variables ($\beta = .2474, p < .001$). In addition, motivation exerted a significant positive effect on listening comprehension ($\beta = .2962, p < .001$). Among the predictors, metacognitive awareness demonstrated the largest standardised regression coefficient ($\beta = .3539, p < .001$), indicating that it was the strongest predictor of listening comprehension within the model. These findings suggest that all three variables make significant and complementary contributions to explaining variations in learners' listening comprehension.

Table 7
Regression Analysis Predicting Listening Comprehension

Predictor	Coefficient	SE	t	p	LLCI	ULCI
Constant	.3921	.1090	3.5983	.0004	.1775	.6068
Self-Regulated Learning	.2474	.0595	4.1606	.0000	.1303	.3645
Motivation	.2962	.0625	4.7416	.0000	.1732	.4193
Metacognitive Awareness	.3539	.0615	5.7516	.0000	.2327	.4751
Model Summary: $R = .8798, R^2 = .7740, F = 280.7730, p = .0000$.						

The mediation analysis presented in Table 8 demonstrated that the direct effect of self-regulated learning on listening comprehension remained statistically significant ($\beta = .2474, p < .001$), with a 95% confidence interval ranging from .1303 to .3645. This finding indicates that self-regulated learning continues to exert a direct positive influence on listening comprehension even after the mediating effects of motivation and metacognitive awareness have

been taken into account. The analysis further revealed that the total indirect effect was statistically significant, with an effect size of .5396 (BootSE = .0522) and a 95% bootstrap confidence interval extending from .4371 to .6423. Because this confidence interval does not include zero, the indirect effect is considered statistically significant. These results confirm that self-regulated learning also enhances listening comprehension indirectly through the combined mediating influences of motivation and metacognitive awareness.

The mediation analysis revealed a statistically significant indirect effect of self-regulated learning on listening comprehension through motivation, with an effect size of .2470 (BootSE = .0572) and a bootstrap confidence interval ranging from .1345 to .3623. Because the confidence interval did not include zero, the findings confirm that motivation significantly mediates the relationship between self-regulated learning and listening comprehension. Similarly, the indirect effect through metacognitive awareness was also statistically significant, with an effect size of .2926 (BootSE = .0530) and a bootstrap confidence interval of .1818 to .3918. This result demonstrates that metacognitive awareness likewise serves as a significant mediator in the relationship between self-regulated learning and listening comprehension.

Table 8

Direct and Indirect Effects of Self-Regulated Learning on Listening Comprehension					
Effect Path	Effect	BootSE	BootLLCI	BootULCI	Interpretation
Direct Effect: SRL → LC	.2474	.0595	.1303	.3645	Significant
Total Indirect Effect	.5396	.0522	.4371	.6423	Significant
Indirect Effect through Motivation	.2470	.0572	.1345	.3623	Significant
Indirect Effect through Metacognitive Awareness	.2926	.0530	.1818	.3918	Significant

As both the direct effect of self-regulated learning on listening comprehension and the indirect effects through motivation and metacognitive awareness remained statistically significant, the mediation analysis supports a model of partial mediation. These findings indicate that self-regulated learning enhances listening comprehension through two complementary pathways: directly by influencing listening performance and indirectly by strengthening learners’ motivation and metacognitive awareness. Overall, the results provide strong support for the study’s research objectives, demonstrating that learners who effectively regulate their learning tend to be more motivated, possess greater metacognitive awareness, and achieve superior listening comprehension outcomes.

Discussion

This chapter interprets the findings in relation to the study’s three research objectives. The results are discussed by drawing comparisons with existing

literature on self-regulated learning, motivation, metacognitive awareness, and listening comprehension to determine the extent to which the findings support, extend, or differ from established academic evidence.

Self-Regulated Learning and Listening Comprehension

The first research objective was to examine the relationship between self-regulated learning and listening comprehension. The findings revealed a strong, positive, and statistically significant association between these two variables, with a Spearman correlation coefficient of $r = .830$ ($p < .01$). In addition, the regression analysis demonstrated that self-regulated learning remained a significant direct predictor of listening comprehension even after motivation and metacognitive awareness were incorporated into the model. These results indicate that learners who establish clear goals, plan their listening activities, monitor their understanding, apply appropriate listening strategies, and evaluate their performance are more likely to achieve higher levels of listening comprehension.

These findings are consistent with the work of Lin Sophie Teng (2022), who argued that self-regulated learning plays a central role in second and foreign language education by enabling learners to regulate their learning behaviours across a range of language tasks. The present results also support the conclusions of Zhou and Rose (2021), who emphasised that successful listening depends not only on linguistic competence but also on learners' ability to prepare effectively, maintain attention, employ appropriate strategies, and reflect on their listening experiences. Similarly, Abdolrezapour and Ghanbari (2021) reported that the implementation of self-regulated learning practices significantly improved listening comprehension among EFL learners. Collectively, these findings reinforce the view that listening comprehension should be understood not merely as a linguistic ability but also as a self-regulated learning process in which strategic learner behaviours play a fundamental role in determining successful listening outcomes.

Self-Regulated Learning, Motivation, and Metacognitive Awareness

The second research objective was to investigate the influence of self-regulated learning on motivation and metacognitive awareness. The findings showed that self-regulated learning was a significant predictor of both constructs, explaining 70.88% of the variance in motivation and 69.89% of the variance in metacognitive awareness. These results indicate that learners who actively regulate their listening learning are more likely to demonstrate higher levels of motivation and greater awareness of the cognitive processes involved in listening comprehension. The present findings are consistent with those reported by Guo et al. (2023), who found a strong association between self-regulated learning, motivation, and English language achievement. They also support the conclusions of Chon and Shin (2019), who identified academic motivation and metacognitive awareness as important characteristics

distinguishing successful second-language listeners.

Similarly, Al-Khresheh and Alruwaili (2024) emphasised that metacognitive abilities play a crucial role in listening comprehension because effective listeners must be capable of understanding, monitoring, and regulating the strategies they employ during listening tasks. Taken together, these findings suggest that self-regulated learning contributes not only to the strategic dimension of language learning but also to learners' motivational and metacognitive development. This is particularly important because improvements in listening comprehension cannot be achieved through repeated exposure to listening materials alone. Rather, learners also require sufficient motivation to sustain their effort and persistence, together with well-developed metacognitive awareness to recognise and address comprehension difficulties effectively.

Mediating Role of Motivation and Metacognitive Awareness

The third research objective examined whether motivation and metacognitive awareness mediate the relationship between self-regulated learning and listening comprehension. The results of the PROCESS mediation analysis confirmed that both motivation and metacognitive awareness served as significant mediators. The indirect effect operating through motivation was statistically significant, and a similarly significant indirect effect was observed through metacognitive awareness. Because the direct effect of self-regulated learning on listening comprehension remained significant after the inclusion of both mediators, the findings support a model of partial mediation. These results indicate that self-regulated learning enhances listening comprehension not only through a direct influence but also indirectly by strengthening learners' motivation and metacognitive awareness.

The findings are consistent with the theoretical perspective of Ryan and Deci (2020), who argued that learners experience higher levels of motivation when their needs for autonomy, competence, and meaningful engagement are fulfilled. Learners who regulate their own learning are more likely to develop a stronger sense of ownership over the learning process, thereby increasing their persistence and commitment to listening tasks. The present results also support the findings of Yo In'nami (2023), who reported a strong relationship between metacognitive awareness and second-language listening comprehension. Likewise, Brett Milliner (2024) demonstrated that metacognitive interventions can positively influence both listening comprehension and listening self-efficacy. Consequently, the current study contributes to the existing body of knowledge by providing empirical evidence that motivation and metacognitive awareness represent important explanatory mechanisms through which self-regulated learning influences listening performance.

Conclusion and Recommendation

Conclusion

This study examined the influence of self-regulated learning on listening comprehension, with particular emphasis on the mediating roles of motivation and metacognitive awareness. Drawing on data collected from 250 participants, the findings demonstrated a significant positive relationship between self-regulated learning and listening comprehension. Learners who consistently set learning goals, planned their listening activities, monitored their comprehension, employed appropriate listening strategies, and evaluated their progress achieved higher levels of listening comprehension. The results further indicated that self-regulated learning significantly enhances both motivation and metacognitive awareness, suggesting that learners who regulate their learning strategically are more likely to exhibit greater interest, persistence, and awareness of their listening processes. The mediation analysis also confirmed that motivation and metacognitive awareness partially mediate the relationship between self-regulated learning and listening comprehension. This finding indicates that self-regulated learning improves listening performance not only through its direct influence but also by fostering learners' motivational and metacognitive development. Overall, the study concludes that listening comprehension can be substantially enhanced when learners are encouraged to become active, reflective, motivated, and strategically aware participants in their own language-learning process.

Implications

Theoretical Implications

This study makes several theoretical contributions by extending the understanding of self-regulated learning within the context of listening comprehension. The findings demonstrate that the influence of self-regulated learning on listening outcomes operates not only through a direct pathway but also indirectly through the mediating roles of motivation and metacognitive awareness. These results reinforce Self-Regulated Learning Theory by highlighting the interconnected nature of strategic, motivational, and metacognitive processes in language learning. Furthermore, the findings provide additional support for Self-Determination Theory, indicating that learners with higher levels of motivation are more likely to engage persistently with listening tasks, thereby contributing to improved listening performance.

Practical Implications

From a practical perspective, the findings suggest that listening instruction should extend beyond treating listening as a passive comprehension exercise. Instead, teachers should incorporate self-regulated learning practices by guiding learners to set goals, plan their listening activities, monitor their

understanding, select appropriate strategies, reflect on their performance, and engage in self-evaluation. Instructional activities that enhance learners' motivation and confidence—such as progress tracking, guided listening practice, constructive feedback, and reflective exercises—should also form an integral part of listening lessons. The findings of this study provide valuable guidance for language programmes seeking to design listening instruction that fosters autonomous, motivated, and metacognitively aware learners capable of managing their own listening development effectively.

Recommendation

It is recommended that English language teachers integrate self-regulated learning strategies into regular listening instruction. Learners should be encouraged to establish clear listening objectives, engage in pre-listening preparation, identify key words and essential information, monitor their comprehension throughout listening activities, and reflect on the difficulties encountered after completing each task. In addition, teachers should foster learners' motivation by incorporating relevant and engaging listening materials, such as academic presentations, podcasts, interviews, and authentic real-life discussions that are appropriate to learners' interests and proficiency levels. The use of metacognitive listening checklists is also recommended, as these tools can help learners evaluate the effectiveness of the strategies they employ during listening tasks. Furthermore, educational institutions should provide professional development programmes that equip teachers with the knowledge and skills required to implement self-regulated listening instruction effectively. Such training would encourage a shift from traditional listening lessons focused primarily on comprehension assessment towards instructional practices that cultivate learners' strategic independence and autonomous listening skills.

Limitation and Future Work

Several limitations should be acknowledged when interpreting the findings of this study. First, the research employed a cross-sectional design, meaning that data were collected at a single point in time. Consequently, although relationships among the variables were identified, the study cannot establish long-term causal effects with certainty. Second, listening comprehension was assessed using participants' perceived listening ability rather than an objective performance measure. Future research could strengthen the validity of the findings by incorporating standardised listening test scores to provide a more accurate assessment of listening competence. Third, the sample consisted of 250 EFL/ESL learners, which may limit the generalisability of the results to other language-learning contexts or populations. Future research should consider adopting longitudinal or experimental designs to examine how self-regulated learning develops over time and to establish stronger causal

inferences. In addition, further studies could compare learners with different proficiency levels, educational backgrounds, or cultural contexts to provide a deeper understanding of how motivation and metacognitive awareness influence listening comprehension across diverse language-learning environments.

References

- Abdolrezapour, P., & Ghanbari, N. (2021). Enhancing learning potential score in EFL listening comprehension and self-regulation through self-regulated dynamic assessment procedures. *Language Testing in Asia*, 11(1), 10. <https://doi.org/10.1186/s40468-021-00126-5>
- Al-Khresheh, M. H., & Alruwaili, S. F. (2024). Metacognition in listening comprehension: Analysing strategies and gender differences among Saudi EFL University students. *Cogent Social Sciences*, 10(1). <https://doi.org/10.1080/23311886.2023.2291954>
- Bloomfield, J., & Fisher, M. J. (2019). Quantitative research design. *Journal of the Australasian Rehabilitation Nurses' Association*, 22(2), 27-30. <https://search.informit.org/doi/pdf/10.3316/informit.738299924514584?download=true>
- Brett Milliner, B. D. (2024). The effects of a metacognitive intervention on lower-proficiency EFL learners' listening comprehension and listening self-efficacy. *Language Teaching Research*, 28(2), 679-713. <https://doi.org/10.1177/13621688211004646>
- Cai, H., & Yu, Q. (2024). The effect of self-perceived learning needs on self-regulated learning and learning outcomes in an EFL listening course. *System*, 127. <https://doi.org/10.1016/j.system.2024.103503>
- Chon, Y. V., & Shin, T. (2019). Profile of second language learners' metacognitive awareness and academic motivation for successful listening: A latent class analysis. *Learning and Individual Differences*, 70, 62-75. <https://psycnet.apa.org/doi/10.1016/j.lindif.2019.01.007>
- Guo, W., Bai, B., Zang, F., Wang, T., & Song, H. (2023). Influences of motivation and grit on students' self-regulated learning and English learning achievement: A comparison between male and female students. *System*, 114. <https://doi.org/10.1016/j.system.2023.103018>
- Jordan, P. J., & Troth, A. C. (2019). Common method bias in applied settings: The dilemma of researching in organisations. *Australian Journal of Management*, 45(1), 3-14. <https://doi.org/10.1177/0312896219871976>
- Joseph F. Hair Jr., G. T. M. H., Christian M. Ringle, Marko Sarstedt, Nicholas P. Danks, Soumya Ray. (2021). Partial least squares structural equation modelling (PLS-SEM) using R: A workbook. Springer. <https://doi.org/10.1007/978-3-030-80519-7>
- Lin Sophie Teng, L. J. Z. (2022). Can self-regulation be transferred to second/foreign language learning and teaching? Current status, controversies, and future directions. *Applied Linguistics*, 43(3), 587-595. <https://doi.org/10.1093/applin/amab032>
- Ruofei Zhang, D. Z. (2024). Self-regulated second language learning: A review of types and benefits of strategies, modes of teacher support, and pedagogical implications. *Computer Assisted Language Learning*, 37(4), 720-765. <https://doi.org/10.1080/09588221.2022.2055081>
- Ryan, R. M., & Deci, E. L. (2020). Intrinsic and extrinsic motivation from a self-determination theory perspective: Definitions, theory, practices, and future directions. *Contemporary Educational Psychology*, 61. <https://doi.org/10.1016/j.cedpsych.2020.101860>
- Ueno, S., Takeuchi, O., & Shinhara, Y. (2025). Exploring the studies of self-regulated learning in second/foreign language learning: A systematic review. *International Journal of TESOL Studies*, 7(1), 126-147. <https://doi.org/10.58304/ijts.20250108>
- Yo In'nam, M. W.-L. C., Rie Koizumi, Matthew P. Wallace. (2023). Examining second language listening and metacognitive awareness: A meta-analytic structural equation modelling approach. *Language Learning*, 73(3), 759-798. <https://doi.org/10.1111/lang.12548>
- Zhou, S., & Rose, H. (2021). Self-regulated listening of students at transition from high school to an English medium instruction (EMI) transnational university in China. *System*, 103. <https://doi.org/10.1016/j.system.2021.102644>

Appendices

Section A: Demographic Information

Gender

1. Male
2. Female

Age

1. 18–20
2. 21–23
3. 24–26
4. Above 26

Academic Level

1. Secondary level
2. Diploma/Foundation
3. Undergraduate
4. Postgraduate

English Learning Background

1. EFL learner
2. ESL learner
3. Other

How long have you been learning English?

1. Less than 1 year
2. 1–3 years
3. 4–6 years
4. More than 6 years

How often do you practice English listening?

1. Rarely
2. Once a week
3. 2–3 times a week
4. 4–5 times a week
5. Daily

Section B: Self-Regulated Learning

This section measures how you plan, monitor, and evaluate your own English listening learning.

Code	Statement
SRL1	I set clear goals before practising English listening.
SRL2	I make a plan for improving my listening comprehension.
SRL3	I choose listening strategies that help me understand spoken English better.
SRL4	I monitor my understanding while listening to English audio or speech.
SRL5	I try different strategies when I do not understand what I hear.
SRL6	I evaluate my listening performance after completing a listening task.
SRL7	I identify my weaknesses in listening and try to improve them.
SRL8	I manage my time effectively for English listening practice.

Section C: Motivation

This section measures your motivation and interest in learning English listening.

Code	Statement
MOT1	I am interested in improving my English listening skills.
MOT2	I feel motivated when I notice progress in my listening comprehension.
MOT3	I practise English listening because it is useful for my academic and career goals.
MOT4	I enjoy listening to English materials such as lectures, podcasts, videos, or conversations.
MOT5	I continue practising listening even when the task is difficult.
MOT6	I believe improving my listening skills will help me become a better English learner.
MOT7	I feel confident that I can improve my listening comprehension through effort.
MOT8	I am willing to spend extra time practising English listening.

Section D: Metacognitive Awareness

This section measures your awareness of how you understand and control your listening process.

Code	Statement
MA1	Before listening, I think about what the topic might be.
MA2	I try to predict the meaning of what I am going to hear.
MA3	While listening, I check whether I understand the main ideas.
MA4	I focus on keywords to help me understand the message.
MA5	I use context to guess the meaning of unfamiliar words.
MA6	I stay focused even when I miss some words or sentences.
MA7	After listening, I think about which parts were easy or difficult.
MA8	I reflect on which strategies helped me understand the listening task.

Section E: Listening Comprehension

This section measures your perceived listening comprehension ability. For stronger research validity, this section may be supported with a separate listening comprehension test.

Code	Statement
LC1	I can understand the main idea of English conversations.
LC2	I can identify important details when listening to English audio.
LC3	I can understand English spoken at a normal speed.
LC4	I can follow classroom lectures or academic discussions in English.
LC5	I can understand the speaker's purpose or intention while listening.

LC6	I can understand English listening materials even when some words are unfamiliar.
LC7	I can summarise what I hear after listening to English audio.
LC8	I usually perform well in English listening activities or tests.
