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English Language Listening Proficiency in a Remote Archipelagic Context: A Mixed-Methods Case Study

Punggulina Andawaty Tiven [1], Wenssy Steva Nussy [2]
[1,2]Universitas Pattimura
Corresponding Author: Punggulina, E-Mail: wenssy.nussy@lecturer.unpatti.ac.id

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ABSTRAK

Mengembangkan pemahaman menyimak EFL di wilayah terisolasi tetap menjadi tugas yang berat akibat kendala kesenjangan digital yang parah dan minimnya paparan bahasa target. Berdasarkan kebutuhan mendesak untuk memahami hambatan ini dalam konteks pendidikan kepulauan, penelitian ini mengkaji tingkat kemahiran menyimak, kesadaran metakognitif, dan hambatan lingkungan di sebuah kampus satelit garis depan. Enam puluh mahasiswa menyelesaikan asesmen menyimak objektif dan kuesioner metakognitif, yang dilengkapi dengan wawancara semi-terstruktur bersama sepuluh partisipan yang mengalami realitas pembelajaran jarak jauh. Data diagnostik menunjukkan rata-rata performa yang moderat-rendah, di mana skor menyimak berhubungan positif dengan perhatian terarah tetapi turun signifikan saat mahasiswa sangat bergantung pada translasi mental. Secara kualitatif, partisipan mengalami hambatan pemrosesan kosakata, kecemasan aksen, dan kelelahan akibat gangguan internet. Pada akhirnya, memperluas kompetensi komunikasi di perbatasan yang terpinggirkan memerlukan transisi dari model ketergantungan daring menuju materi pembelajaran luring yang mengintegrasikan pelatihan kognitif eksplisit dengan alat kecerdasan buatan terpandu yang responsif secara budaya, yang mana diusulkan sebagai kerangka kerja tingkat praktisi diperlukan validasi empiris.

Kata Kunci : pemahaman menyimak EFL, kesadaran metakognitif, pendidikan kepulauan, kesenjangan digital, pembelajaran jarak jauh

ABSTRACT

Developing EFL listening comprehension in isolated territories remains an arduous task due to severe digital divide constraints and minimal target language exposure. Posing a critical need to understand how students navigate these barriers within archipelagic education contexts, this study examined listening proficiency, metacognitive awareness, and environmental obstacles at a frontier satellite campus. Sixty undergraduate students completed an objective listening assessment and a metacognitive questionnaire, supplemented by semi-structured interviews with ten participants experiencing the realities of remote learning. Diagnostic data revealed a moderate-low performance average, where listening scores linked positively with focused attention but dropped significantly when students relied heavily on mental translation. Qualitatively, participants suffered from vocabulary-processing friction, accent anxiety, and internet-disruption fatigue. Ultimately, expanding communication competence in marginalized borders requires transitioning from online-dependent models toward localized, offline-first instructional materials that combine explicit cognitive training with culturally responsive, human-in-the loop AI tools, which are presented here as a practitioner-level framework awaiting empirical validation.

Keywords: *EFL listening comprehension, metacognitive awareness, archipelagic education, digital divide, remote learning*

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INTRODUCTION

Developing listening comprehension stands as a crucial yet uniquely taxing milestone for language students navigating a foreign language environment. In the field of English as a Foreign Language (EFL), this skill serves as a fundamental yet highly complex cognitive process where the internal mental operations are often obscured from direct observation (Sadatmir et al., 2022). Despite its critical role, mastering listening skills remains a complicated task for many students in outer-island territories, where the complexities of decoding oral texts are significantly magnified by both geographical isolation and severe digital disparity.

In the Indonesian higher education landscape, the systemic challenge of English proficiency has been a long-standing concern. Nationally, students frequently struggle to attain standard proficiency thresholds due to limited exposure and institutional constraints (Renandya et al., 2018). While this proficiency deficit represents a widespread national issue, its academic consequences become exponentially more severe when examined within the country's most isolated educational sectors. The instructional reality in remote archipelagic regions presents a highly intricate set of structural and environmental complications that directly hinder language learning.

In satellite campus programs such as the PSDKU Universitas Pattimura in Kabupaten Kepulauan Aru (PSDKU Aru), these barriers are uniquely compounded. Situated in Dobo, the capital city of Kabupaten Kepulauan Aru, geographically and culturally distant from the main campus in Ambon, this program operates within a double periphery. Students are not only non-native English speakers but also reside in one of Indonesia's designated 3T (*Tertinggal, Terdepan, Terluar*—disadvantaged, outermost, frontier) regions. The local linguistic landscape is dominated by local language and Indonesian, with minimal incidental exposure to authentic English.

Students in these low-exposure EFL settings face a multi-layered digital divide where unstable electricity and inadequate internet infrastructure severely restrict routine access to high-quality audio input (Van Dijk, 2020; Wahyuni et al., 2026). This technological disparity is further exacerbated in rural Indonesian tertiary education, where students often exhibit restricted digital literacy and a high dependence on hybrid learning models that frequently fail due to baseline connectivity issues (Hidayah & Gunawan, 2025).

Furthermore, these environmental hurdles heavily intersect with deep-rooted sosiokultural and linguistic realities. The dominance of local vernaculars, according to Khatima et al. (2025), heavily shapes how students cognitively process English, which subsequently necessitates intricate trilingual shifting and adapting mechanisms during daily academic communication. Specifically, these learners must constantly navigate a complex linguistic triad consisting of their native local Aru vernaculars (or Ambonese Malay) as the primary home language, Indonesian as the dominant medium of formal instruction, and English as the target foreign language. As contemporary multilingual processing scholarship demonstrates, managing active cross-linguistic lexical competition within the working memory drastically increases extraneous cognitive load and reduces the cognitive bandwidth available for real-time auditory decoding in the target language (Borisova et al., 2024; Xu & Xie, 2024). This emotional and cognitive strain is particularly acute in listening contexts, where limited cognitive control abilities and text-shifting anxiety block the mental resources required to follow real-time speech speeds and decode phonological input efficiently (Xu & Xie, 2024). Consequently, the combination of an unsupportive digital environment, restricted linguistic exposure, and a pervasive lack of adapted learning materials often culminates in low self-confidence alongside heightened listening anxiety among university students (Angraeni et al., 2024).

From an internal perspective, these persistent external limitations inevitably impair the internal mental operations required for students to process spoken language efficiently. This systemic disruption frequently leads to a state of cognitive overload (Sweller, 2011). When confronted with rapid, authentic spoken English, EFL students frequently experience the common frustration of the tape is too fast (Renandya & Farrell, 2011). This perception of excessive speed typically arises because less-skilled listeners lack the necessary metacognitive mechanism to regulate their processing phases. Instead of applying top-down strategies to grasp global meaning, they tend to over-rely on bottom-up processing, becoming cognitively overwhelmed by the demand to decode every individual word in real time (Renandya & Farrell, 2011; Suryani & Hartono, 2025).

To decrease these internal processing difficulties, contemporary pedagogy strongly emphasizes the necessity of cultivating strategic and reflective learning habits among students. In Second Language Acquisition (SLA) literature, this is increasingly framed around the crucial role of metacognitive awareness in listening (Goh & Vandergrift, 2021). Metacognitive awareness allows students to plan, monitor, and evaluate their comprehension processes, transforming them from passive listeners into strategic, self-regulated agents. However, while extensive research has investigated the relationship between metacognitive awareness and listening success in well-resourced urban settings, empirical studies focusing on how these cognitive strategies function under the constraints of extreme archipelagic isolation remain profoundly scarce.

By identifying these critical gaps, the present study seeks to map out the empirical intersections between geographical challenges and cognitive strategy deployment. The primary objective of this work is to evaluate the English listening proficiency, investigate the patterns of metacognitive awareness, and uncover the specific contextual barriers experienced by undergraduate EFL learners under the constraints of extreme archipelagic isolation. To achieve these goals, this study adopts an explanatory sequential mixed-methods case study design conducted at the English Education Study Program (EESP) in the satellite campus of Universitas Pattimura in Kabupaten Kepulauan Aru (PSDKU Aru). The methodology initiates with a dominant quantitative phase utilizing an objective listening assessment alongside a standardized metacognitive questionnaire to capture macro-level patterns, which is subsequently expanded

by a qualitative phase through semi-structured interviews to provide a deep, contextualized explanation of the learners' authentic experiences.

Research Questions

This study intends to provide a nuanced diagnostic framework capable of guiding localized pedagogical interventions, such as offline-first instructional materials and human-in-the-loop AI applications, to bridge the digital and cognitive divides in isolated educational environments. The research questions are as follows:

1. What are the English listening proficiency levels and metacognitive awareness profiles of undergraduate students enrolled in the EESP at PSDKU Aru?
2. To what extent do specific metacognitive strategy domains (e.g., Directed Attention, Mental Translation) statistically correlate with the students' listening test performance?
3. How do the undergraduate learners perceive the qualitative dimensions—specifically linguistic, psychological, socio-cultural, and environmental factors—that facilitate their listening comprehension within this unique remote island context?

Objectives Of The Study

Below are the objectives of the study:

1. To describe the English listening proficiency levels and metacognitive awareness profiles of undergraduate students enrolled in the EESP at PSDKU Aru.
2. To determine the statistical relationship between specific metacognitive strategy domains and the students' listening test performance.
3. To explore and explain the qualitative dimensions (linguistic, psychological, socio-cultural, and environmental factors) that students perceive as influencing their listening comprehension within the unique context of a remote island campus.

Significance Of The Study

1. Theoretically, this study extends the existing body of Second Language Acquisition (SLA) literature by providing rare empirical evidence on how metacognitive awareness functions under the extreme constraints of archipelagic isolation, thereby refining established frameworks such as Cognitive Load Theory and the Affective Filter Hypothesis within the context of a "double periphery."
2. Practically, the findings offer actionable guidance for educators and policymakers by informing the development of localized, offline-first pedagogical materials, targeted metacognitive strategy training, and human-in-the-loop AI tools that circumvent the digital divide, while also empowering students with effective self-regulation strategies to overcome listening anxiety and cognitive overload.
3. Academically, this research bridges a critical gap in the literature on listening comprehension in underserved regions, provides a replicable methodological model through its explanatory sequential mixed-methods design, and offers a validated diagnostic framework that can be adapted for future studies in similar 3T (Terdepan, Terluar, Tertinggal) educational contexts.

METHODS

This study employed an explanatory sequential mixed-methods design (Creswell & Clark, 2017), grounded in a pragmatic paradigm. This two-phase approach was selected to first provide a broad, generalizable overview of listening proficiency and strategy use (quantitative phase), and then to probe deeper into the reasons, mechanisms, and contextual narratives behind the statistical patterns (qualitative phase). The sequential nature allowed the qualitative data collection and analysis to be explicitly informed by the initial quantitative results, enabling a richer, more nuanced interpretation.

The study was conducted at the EESP of PSDKU Aru. The total population consisted of 75 undergraduate EFL students enrolled in the program across the second, fourth, and sixth semesters. However, this study employed a purposive, criterion-based sampling technique to select the final sample. Out of the total population, only 60 students who were verified as active and regularly attending classes during the academic semester were included as participants. The remaining 15 students were excluded strictly based on university administrative and academic eligibility criteria: 10 students were verified as academically inactive due to official leave or non-registration from unpaid tuition fees, while 5 were

disqualified because their class attendance fell below the mandatory 75% institutional threshold. Because these exclusions were determined purely by external administrative regulations rather than researcher preference, the subgroup did not introduce any systemic selection bias. This criterion was strictly applied to ensure the reliability and validity of the data gathered from the Listening Comprehension Test (LCT) and the Metacognitive Awareness Listening Questionnaire (MALQ)

Quantitative data were collected using two instruments. First, a 40-item multiple-choice LCT was adapted from the retired TOEFL ITP, consisting of Part A (15 short dialogues), Part B (10 long conversations), and Part C (15 talks). Pilot testing (n = 20) confirmed psychometric soundness, yielding an item difficulty index of 0.35-0.72, a discrimination index above 0.40, and a Cronbach's alpha of 0.87. Proficiency bands were scaled using the official TOEFL ITP conversion table, mapping a raw score of 19 directly to the CEFR A2/B1 threshold. Second, the 21-item MALQ was adopted from (Vandergrift et al., 2006) in its validated Indonesian translation. These datasets were analyzed via SPSS for descriptive statistics and Pearson correlations, complemented by qualitative thematic analysis of semi-structured interviews.

RESULTS AND DISCUSSIONS

Quantitave Findings

Listening Proficiency Profile

Descriptive analysis of the LCT scores painted a clear picture of the cohort's challenges. The overall mean score was 48.5 out of 100 (*SD* = 12.34), which, based on local institutional benchmarks aligning with the TOEFL ITP score bands, falls into a Moderate-Low proficiency category. A more granular analysis of the test subsections revealed a descending performance trend from shorter to longer, more complex audio texts.

Table 1. Descriptive Statistics for Listening Comprehension Test (*N*=60)

Subsection	Max Score	Lowest Score	Highest Score	Mean (*SD*)	Proficiency Category
Part A (Short Dialogues)	15	5	14	9.2 (2.1)	Moderate
Part B (Long Conversations)	10	2	9	5.1 (1.85)	Low
Part C (Talks/Lectures)	15	3	12	5.8 (2.45)	Low
Total LCT Score				**48.5 (12.34)**	**Moderate-Low**

The notably low mean for Part B (Long Conversations) suggests particular difficulty in tracking referents, managing information density over time, and sustaining focused attention across speaker turns.

Metacognitive Awareness Profile

Analysis of the MALQ responses indicated that students were highly aware of using certain strategies, though not all were beneficial.

Table 2. Descriptive Statistics for MALQ Subscales (*N*=60)

MALQ Subscale	Mean (1-6 Scale)	*SD*	Interpretation
Problem-Solving (PS)	4.82	0.91	High Reported Usage
Mental Translation (MT)	5.10	0.87	Very High Reported Usage
Directed Attention (DA)	4.15	1.02	Moderate-High Reported Usage
Person Knowledge (PK)	3.90	1.15	Moderate Reported Usage
Planning/Evaluation (PE)	3.50	1.21	Moderate Reported Usage

The strikingly high mean for Mental Translation (5.10) is a critical finding, indicating a deeply entrenched habit of processing English auditory input through an Indonesian lexical filter.

Correlation and Comparative Analyses

Pearson correlation analysis revealed significant relationships between strategy use and listening performance.

Table 3. Correlations between MALQ Subscales and Total LCT Score

MALQ Subscale	*r Pearson*	*p Value (2-tailed)*
Problem-Solving (PS)	.45	< .001
Directed Attention (DA)	.64	< .001
Mental Translation (MT)	-.58	< .001
Planning/Evaluation (PE)	.22	.089
Person Knowledge (PK)	-.31	.017

The strong positive correlation with Directed Attention ($r = .64$) and the strong negative correlation with Mental Translation ($r = -.58$) were statistically significant at the $p < .001$ level. Independent samples t-tests further confirmed that High Achievers reported significantly higher use of Directed Attention (t (58) = 3.42, $p = .001$) and significantly lower use of Mental Translation (t (58) = -4.01, $p < .001$) compared to Low Achievers.

Qualitative Findings

Thematic analysis of the interview transcripts yielded three overarching themes that explicate the quantitative data, providing rich insight into the subjective experience of listening in this context.

The Cognitive Quandary of the Speed-Vocabulary Trade-off

This theme captures the central cognitive dilemma described by participants. Students articulated a paralyzing cycle namely upon encountering an unfamiliar word, their attention would lock onto deciphering it, typically through mental translation. This micro-process consumed precious seconds, causing them to miss the next three sentences, as one participant stated (P02). The transient nature of speech meant this lapse was irrecoverable, leading to a complete breakdown in discourse-level comprehension. A Low Achiever (P04) encapsulated this, *"The audio keeps running, but my brain has stopped at one word. It's like trying to read a road sign while falling off a bicycle."* High Achievers described a different tactic, often involving the conscious suppression of the translation impulse. As one (P07) noted, *"I taught myself to let the unknown word go. I focus on what I can understand, and often the meaning becomes clear later."*

Affective Filter Elevation due to Phonological Alienation

Participants consistently reported heightened anxiety specifically triggered by the phonological features of native-speaker accents in standardized listening materials, typically American or British. This accent anxiety stemmed from a stark lack of exposure. Their primary sources of auditory input were their Indonesian lecturers. The authentic materials featured speech patterns—elisions, weak forms, unfamiliar intonation contours—that sounded closed, mumbled, or alien. This perceptual mismatch immediately raised their affective filter, inducing panic and cognitive shutdown. *"When I hear that tight British accent, my heart races first, then my mind goes blank. It's like a wall of sound, not words,"* shared a High Achiever (P09), revealing that even proficient students were not immune to this affective barrier.

Infrastructure as an Agent of Auditory Fatigue and Disengagement

A distinctly contextual theme emerged regarding the infrastructural environment. Participants described the act of autonomous listening practice not as a learning activity but as a battle with the signal. Attempts to use online resources like YouTube or educational podcasts were frequently thwarted by slow, unstable internet connections. The constant buffering, low audio quality, and need to repeatedly reload files were described as profoundly frustrating and mentally exhausting, leading to auditory fatigue. This fatigue actively discouraged practice. As Participant 02 explained, "W*hy would I spend an hour trying to watch a 10-minute video that keeps stopping? It's easier and less frustrating to just read the subtitles or a transcript."* This forced a retreat to the comfort of the written word, further reinforcing their reading skills while neglecting their real-time speech processing development.

Discussion

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Discussion

The integrated findings of this mixed-methods study illuminate a complex, self-reinforcing ecosystem of challenges that constrain the development of English listening proficiency among students in the remote archipelagic context of PSDKU Aru. The quantitative data provided a clear, measurable landscape of the ongoing linguistic realities, revealing a moderate-low proficiency level characterized by a significant struggle with extended discourse and a metacognitive profile heavily dominated by the counterproductive strategy of Mental Translation. The qualitative narratives then powerfully explained the underlying causes, giving a human dimension to the statistics and revealing how fossilized cognitive habits, heightened affective responses, and structural environmental constraints interact to produce the observed outcomes. By examining these multi-layered intersections, it becomes evident that the systemic proficiency deficit is not merely a reflection of individual learning capacities but is fundamentally shaped by the unique constraints of a double periphery.

The strong negative correlation between Mental Translation and listening performance stands as a salient statistical reality that is vividly operationalized through the qualitative theme of the Speed-Vocabulary Trade-off. This synergy confirms that the high self-reported use of translation is not a neutral compensatory strategy but a primary engine of comprehension failure among remote EFL learners. This

operational constraint is highly consistent with recent empirical data from (Hidayah & Gunawan, 2025), which demonstrates that university-level EFL learners frequently default to word-for-word translation when facing rapid speech rates and limited vocabulary sizes, ultimately losing track of the spoken input. As per the testimonies, underdeveloped vocabulary sizes force these outer-island learners to treat the incoming auditory stream not as a fluid message, but as a series of disconnected lexical puzzles that must be deciphered one by one.

As per the cognitive theory of multimedia learning and models of working memory, the conscious act of lexical search and cross-linguistic mapping consumes the limited cognitive resources necessary for holding and integrating incoming auditory information in real time (Baddeley, 2003; Mayer, 2009). Because the physical nature of speech is ephemeral, the time wasted on word-by-word decoding causes immediate information loss, trapping students in an irrecoverable processing bottleneck. This critical finding strongly echoes the identification of bottom-up processing traps where struggling listeners fail to access global text meaning because they cannot suppress literal translation impulses (Suryani & Hartono, 2025). Consequently, as noted by (Nasution & Prihatini, 2025), without explicit training in higher-order metacognitive awareness like real-time monitoring and planning, students remain trapped in these ineffective bottom-up habits that continuously depress their comprehension performance. Rather than functioning as a helpful tool, the heavy reliance on translation serves as a self-defeating cognitive crutch that is exacerbated by the total lack of incidental target language exposure outside institutional walls.

Conversely, the strong positive correlation identified between Directed Attention and objective listening scores underscores a vital pathway for strategic pedagogical intervention. The qualitative comparisons suggest that higher-performing students are distinguished not necessarily by vastly superior vocabularies, but by their developed capacity for cognitive resilience. These skilled listeners possess the executive self-regulation to notice when their attention has wandered or when comprehension has broken down, allowing them to consciously redirect their focus to the ongoing input stream. This strategic behavior aligns directly with modern metacognitive frameworks which emphasize that effective listening involves continuous self-monitoring and active recovery practices (Goh & Vandergrift, 2021). However, the interviews also reveal that this strategic attention remains highly fragile when students are suddenly confronted with the intense psychological pressures of accent anxiety. The sudden elevation of the affective filter, triggered by the perceptual novelty of native-speaker phonology, can instantly overwhelm a student's best strategic intentions and cause total cognitive shutdown. Therefore, strategy training in peripheral sectors cannot remain purely cognitive; it must be systematically coupled with graduated, low-anxiety exposure to diverse world Englishes to desensitize learners and successfully lower their affective barriers.

This contextual barrier of infrastructure-induced auditory fatigue critically challenges mainstream educational discourses that unconditionally promote digital solutions in EFL teaching. While contemporary educational technology frameworks heavily champion high-bandwidth online streaming and interactive cloud platforms, this study documents how the digital divide actively discourages and penalizes independent listening practice in frontier regions. This barrier underscores a critical irony in modern EFL pedagogy: while digital and multimedia resources are highly praised for providing authentic input, their efficacy is entirely dependent on stable technological infrastructure. As demonstrated by (Lestari & Sianipar, 2024), although the integration of multimedia resources and metacognitive strategies can significantly optimize students' listening performance under ideal conditions, these digital advantages completely break down in environments plagued by technical disruptions.

Applying cognitive load theory to this reality reveals that the extraneous load imposed by battling poor connectivity—such as managing constant buffering, low-quality audio, and frequent signal dropouts—directly competes for the limited mental resources required for essential language processing (Sweller, 2011). This physical and mental strain leads to rapid auditory exhaustion, forcing students to retreat to the security of the written word and completely stall their real-time speech processing development. This environmental marginalization is a defining feature of borderland educational settings, where infrastructural material scarcity directly amplifies students' affective disengagement (Van Dijk, 2020; Wahyuni et al., 2026). Consequently, proposing conventional online listening models in 3T regions is pedagogically futile, necessitating a shift toward robust, offline-first educational solutions.

Resolving this complex intersection of digital disparities and cognitive translation traps demands innovative pedagogical frameworks that respect local resource constraints while maximizing cognitive engagement. This is where the emerging potential of a human-in-the-loop AI model can be cautiously and

creatively harnessed by remote educators. Rather than forcing students to access unpredictable online networks, instructors can utilize generative AI tools during brief windows of connectivity to construct culturally responsive, level-appropriate listening scripts tailored to local archipelagic realities. These customized text inputs can then be recorded locally, compiled into a digital Listening Bank, and distributed to student devices via physical media like USB drives or localized campus intranets that require zero external internet access. This blended framework leverages advanced technology for efficient content creation while firmly preserving crucial educator oversight and bypassing infrastructural limitations (Kasneci et al., 2023). By pairing these localized, high-quality audio repositories with explicit metacognitive interventions—such as systematic shadowing and directed attention exercises—peripheral institutions can actively empower remote learners to break the cycle of translation anxiety and achieve sustained listening growth.

CONCLUSIONS

Several prominent conclusions can be synthesized based on the empirical insights yielded from the statistical data and subsequent thematic analysis. First, undergraduate students in the remote satellite campus (PSDKU Aru) exhibit a moderate-low overall listening proficiency (M=48.5), struggling most acutely with extended oral conversations and talks. Second, this proficiency deficit is statistically determined by a critical metacognitive imbalance; a strong negative correlation (r = -.58) demonstrates that students are heavily trapped in a habit of word-for-word Mental Translation, whereas a strong positive correlation (r = .64) confirms that successful comprehension relies strictly on the conscious deployment of Directed Attention. Third, these internal processing traps are directly reinforced by severe environmental and affective barriers within the 3T context, specifically a multi-layered digital divide that induces infrastructure-related auditory fatigue, and a strong local trilingual shifting landscape that breeds debilitating accent anxiety when students face unfamiliar native-speaker phonology. Ultimately, this study concludes that breaking this cycle of linguistic isolation requires shifting away from online-dependent models toward localized, offline-first pedagogical interventions that integrate explicit metacognitive strategy training with culturally responsive, human-in-the-loop AI materials.

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