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The Relationship among Students' Listening Fatigue, Vocabulary Size and English Listening Comprehension in Announcements at SMK Labor Pekanbaru

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Abstract

Listening comprehension remains a critical yet challenging skill for vocational high school students, often affected by both psychological and linguistic factors during real-time speech processing. This research examined the simultaneous relationship among listening fatigue, vocabulary size, and English listening comprehension in announcement texts among vocational high school students. Utilizing a quantitative correlational design, 30 tenth-grade students at SMK Labor Pekanbaru were selected as the sample using simple random sampling method. Data were collected through three validated instruments: a 22-item listening fatigue questionnaire, a 25-item vocabulary size test, and a 12-question listening comprehension test specifically focused on transport announcements. The collected data were analyzed using multiple correlation analysis in SPSS version 26. The result revealed a statistically significant and very strong positive correlation among the variables ($R = 0.829$, $p = 0.000 < 0.05$). Furthermore, the coefficient of determination indicated that listening fatigue and vocabulary size jointly accounted for 68.7% ($R^2 = 0.687$) of the variance in students' listening comprehension performance, with the remaining 31.3% influenced by unexamined external factors. The research concludes that managing cognitive fatigue alongside expanding receptive vocabulary is crucial for optimizing EFL listening performance in vocational contexts. Based on these results, English educators are strongly recommended to integrate strategic cognitive breaks, manage listening task duration, and implement systematic vocabulary instruction tailored to specialized instructional materials.

Keywords: listening fatigue; vocabulary size; English listening comprehension; announcement texts; EFL learners.

INTRODUCTION

In today's era of global connectivity, English serves as an indispensable lingua franca that facilitates communication, academic advancement, business, and international collaboration across diverse geographical boundaries (Feruza & Gulnoza, 2024; Isadaud et al., 2022). Within the Indonesian educational system, English is taught as a foreign language (EFL) from primary through upper secondary levels to equip learners with both linguistic competence and functional communicative skills required to access global knowledge networks (Philip et al., 2025). Language learning encompasses four interdependent skills: listening, speaking, reading, and writing (Fenuku, 2024). Among these core skills, listening acts as the fundamental building block of language acquisition by delivering comprehensible auditory input. Without effective listening comprehension, learners struggle to process oral messages, retain vocabulary, and develop natural speaking proficiency (Alzamil, 2021; Syafei et al., 2025). Ideally, upper secondary and vocational high school students receive well-structured listening instruction characterized by

clear audio materials, speech rates adjusted to their developmental levels, systematic teacher modeling, pre-listening schema activation, and post-listening reflection tasks. Under these ideal conditions, learners progressively develop automaticity in auditory decoding and extract key information from various functional spoken texts, such as school and public announcements.

However, in real-world classroom settings, Indonesian EFL learners continually encounter substantial obstacles when processing spoken English. Listening is widely recognized as the most complex and cognitively demanding skill because it requires immediate, real-time processing of acoustic signals without the opportunity to pause or re-read the input (Hardiyanto et al., 2021; Masykuri, 2022). Empirical observations in Indonesian high school and university reveal that students frequently struggle to comprehend auditory input due to rapid speech delivery, unfamiliar regional or native accents, blurred articulation, and limited lexical knowledge (Nadhira et al., 2026; Windamayanti et al., 2022). This problem is particularly acute in vocational high schools (SMK), where English curriculum requirements emphasize practical, industry-oriented communication while students often possess diverse academic backgrounds and varying levels of prior English exposure. Furthermore, instructional constraints such as scheduling listening classes during late afternoon periods when students are already physically and mentally drained exacerbate comprehension failures. Consequently, even highly motivated students frequently underperform during listening assessments due to cognitive exhaustion rather than an absolute lack of language aptitude.

To understand the breakdown of listening comprehension, language researchers have highlighted the vital role of vocabulary knowledge. Vocabulary size, defined as the total number of words a learner knows in terms of recognizing their meanings in a receptive manner, serves as the primary linguistic foundation for speech processing (Luo et al., 2021; Masrai & Milton, 2021). During real-time listening, learners rely heavily on rapid lexical recognition to decode phonological signals and construct coherent mental representations of spoken messages (Li et al., 2024). A substantial vocabulary size enables learners to identify keywords automatically, thereby freeing up working memory capacity for higher-level cognitive operations such as inferencing and contextual integration (Phung & Ha, 2022; Sardorovna, 2024), Aligning with this view, Newton & Nation (2021) emphasize that effective listening comprehension heavily relies on high vocabulary familiarity, as unrecognized spoken words force learners to exert excessive cognitive effort. Conversely, as noted by Allal-sumoto & Miyoshi (2023) and (Hamdanat (2024), a limited vocabulary size increases processing difficulty, forcing learners to pause and analyze individual unfamiliar words, which causes them to lose track of the continuous audio stream.

In addition to linguistic constraints, psychological and physiological factors such as listening fatigue exert a powerful influence on speech processing. Listening fatigue refers to the state of cognitive, mental, or emotional exhaustion resulting from sustained or effortful listening in demanding auditory environments (Audiffren et al., 2023; Davis et al., 2021). Unlike general tiredness, listening-related fatigue arises specifically when the cognitive resources required to process acoustic signals exceed the listener's available processing capacity (Blümer et al., 2024). In EFL classrooms, continuous auditory effort exacerbated by poor acoustic conditions, background noise, unclear audio quality, fast speech, and prolonged task duration triggers mental strain (Arthur, 2021; Bsharat-maalouf et al., 2023). As demonstrated by Gong et al. (2025), Han et al. (2024), Holman et al. (2021), when listening fatigue sets in, critical cognitive faculties

including sustained attention, working memory allocation, and information processing speed deteriorate markedly, leading to diminished comprehension performance. Despite the acknowledged significance of both variables, a critical gap exists in the current EFL literature. While the relationship between vocabulary size and listening comprehension has been extensively documented across various international and domestic contexts (Alshehri, 2023; Sari et al., 2026), empirical research investigating listening fatigue within EFL learning remains remarkably sparse. Most existing studies on listening-related fatigue have been conducted in clinical, audiological, or primary school settings abroad, relying primarily on physiological measures such as pupillometry or qualitative focus group discussions among individuals with hearing impairments (Brännström et al., 2021; Davis et al., 2021). Furthermore, prior literature has predominantly analyzed vocabulary size and cognitive fatigue as isolated constructs. There is a noticeable dearth of empirical evidence regarding how listening fatigue and vocabulary size interact simultaneously to influence listening comprehension within Indonesian vocational high school environments, where unique contextual factors such as specialized vocational curricula, dense daily schedules, and noisy classroom conditions further intensify cognitive load.

To bridge these empirical and contextual gaps, the present research offers novelty by examining the simultaneous relationship among listening fatigue, vocabulary size, and English listening comprehension in announcement texts among vocational high school students. Announcement texts represent a fundamental short functional genre included in the Grade 10 curriculum, requiring students to extract specific informational details (such as event, time, and location) under tight temporal constraints (Cherkunova & Starostina, 2020) (Zahra et al,, 2021). By combining a psychological-cognitive variable (listening fatigue) and a core linguistic variable (vocabulary size) into a unified quantitative correlational framework, this study provides a comprehensive explanation of the multi-faceted mechanisms governing listening performance. Specifically, this research aims to answer whether a statistically significant simultaneous relationship exists among listening fatigue, vocabulary size, and English listening comprehension in announcement texts among grade ten students at SMK Labor Pekanbaru.

Previous Research

Previous research have explored the distinct roles of vocabulary size and cognitive fatigue in language learning across various educational contexts. Regarding vocabulary knowledge, Sari et al. (2026) emphasized through a theoretical review that vocabulary knowledge, depth of knowledge, and lexical processing are essential components for accurate listening comprehension. In an empirical investigation, Alshehri (2023) demonstrated that vocabulary size significantly and positively correlated with reading and listening performance among 38 Saudi undergraduate EFL learners using Nation's Vocabulary Size Test and standardized TOEFL listening measures. On the other hand, research on listening-related fatigue has primarily developed within clinical and international settings. Brännström et al. (2021) utilized experimental pupillometry measurements to prove that sustained listening effort and fatigue adversely affect speech processing among primary school children. Furthermore, Davis et al. (2021) conducted a qualitative focus group study among 43 adults with hearing loss, identifying physical, mental, emotional, and social dimensions of listening-related fatigue.

Although these studies provide valuable insights into L2 listening, several critical gaps remain in the existing literature. Most previous researchers have examined vocabulary size and listening fatigue as separate variables, relying on tertiary students, clinical adult groups, or primary school children in international contexts. Consequently, there is limited empirical evidence regarding how vocabulary size and cognitive fatigue interact simultaneously within an Indonesian vocational high school setting. This study aims to fill this gap by analyzing the simultaneous relationship among listening fatigue, vocabulary size, and English listening comprehension in announcement texts among Grade X students at SMK Labor Pekanbaru.

METHOD

This study employed a quantitative correlational design using multiple correlation analysis to examine the simultaneous relationship between listening fatigue, vocabulary size, and English listening comprehension. The research was conducted at SMK Labor Pekanbaru in July 2026, targeting a total population of 119 Grade 10th students across five major specializations. A representative sample of 30 students (25% of the total population) was selected through simple random sampling method.

Participants

The participants involved in this study were 30 Grade 10th students from two selected vocational majors, namely Software Engineering and Game Development (*Pengembangan Perangkat Lunak dan Gim*) and Digital Retail and Business (*Bisnis Ritel/Digital*), who actively participated in structured English listening activities as part of their curriculum.

Instruments

Data were collected using three main instruments: a Listening Fatigue Questionnaire, a Vocabulary Size Test, and a Listening Comprehension Test. The Listening Fatigue Questionnaire was adapted from Sarem et al. (2019) and Sayalı et al. (2023) using a 4-point Likert scale (1 = Strongly Disagree to 4 = Strongly Agree) to measure anxiety, attention, emotional exhaustion, and cognitive effort; 22 items were declared valid with a Cronbach's Alpha of 0.856. The Vocabulary Size Test was adapted from Nation to measure written receptive vocabulary and form-meaning connections in announcement contexts; 25 multiple-choice items were declared valid with a Cronbach's Alpha of 0.933. The Listening Comprehension Test was adopted from the British Council Learn English platform ("Transport Announcements"), consisting of 12 items divided into 8 factual True/False questions and 4 numerical short-answer items.

Data collection procedures

Data collection procedures were carried out sequentially under direct researcher supervision to maintain objectivity, beginning with instrument validity and reliability pilot testing, followed by administering the 25-item Vocabulary Size Test, conducting the audio-based Listening Comprehension Test, distributing the 22-item Listening Fatigue Questionnaire, and tabulating all raw scores into quantitative data.

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Data analysis

The data were analyzed using SPSS version 26. Descriptive statistics were computed first, followed by parametric assumption tests, including the Shapiro-Wilk test to evaluate data normality ($p > 0.05$) and linearity tests to ensure linear relationships among variables ($p > 0.05$ for deviation from linearity). Finally, multiple correlation analysis was performed at a significance level of alpha = 0.05 to evaluate the correlation among listening fatigue, vocabulary size, and English listening comprehension.

RESULTS AND DISCUSSION

This section presents the comprehensive empirical results of the study and an in-depth discussion interpreting these results. The section covers descriptive statistics, parametric assumption evaluations, bivariate partial correlation analyses, and multiple correlation analysis to determine the simultaneous relationship between listening fatigue, vocabulary size, and English listening comprehension among vocational high school students. The statistical outcomes are thoroughly examined in relation to existing theoretical frameworks, empirical literature in second language acquisition, classroom cognitive dynamics, and practical pedagogical applications.

Descriptive Statistics and Parametric Prerequisites

Descriptive statistical analyses were initially performed to establish a comprehensive baseline overview of the data distribution across all research variables among the 30 participants (N = 30). For listening fatigue, individual scores spanned from a minimum of 25 to a maximum of 79, with a mean score of 51.10, a standard deviation of 10.145, and a variance of 102.921. This mean score places the overall group fatigue level within the moderate category, suggesting that while students were not experiencing extreme physical or cognitive exhaustion, processing continuous foreign language listening tasks imposed a noticeable mental burden. The wide range of 54 points between the lowest and highest fatigue scores highlights substantial individual variability in how students perceive and absorb listening effort in the classroom. The summary of the descriptive statistical analysis for listening fatigue is presented in Table 1 below.

Table 1. Descriptive Analysis of Listening Fatigue Questionnaire

Deskriptive Statistics								
	N	Range	Minimum	Maximum	Sum	Mean	Std. Deviation	Variance
Listening Fatigue	30	54	25	79	1533	51.10	10.145	102.921
Valid N (listwise)	30							

In terms of vocabulary size, individual scores ranged from a minimum of 48 to a maximum of 100, yielding an overall group mean of 80.40, a standard deviation of 15.415, and a variance of 237.628. This high average score reflects a solid foundation of receptive vocabulary mastery regarding announcement texts among the participants. However, the score range of 52 points demonstrates that lexical knowledge remains unevenly distributed across the sample. A detailed summary of these descriptive statistics for vocabulary size is provided in Table 2.

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Table 2. Descriptive Analysis of Vocabulary Size Test

Deskriptive Statistics								
	N	Range	Minimum	Maximum	Sum	Mean	Std. Deviation	Variance
Vocabulary Size	30	52	48	100	2412	80.40	15.415	237.628
Valid N (listwise)	30							

Regarding English listening comprehension, test scores spanned from 42 to 100, with a group mean of 75.00, a standard deviation of 14.472, and a variance of 209.448. This group average places student listening performance in a good category, though the range of 58 points underscores a wide gap between high-performing and low-performing listeners when interpreting spoken informational texts. The summary of the descriptive statistical analysis for English listening comprehension is presented in Table 3 below.

Table 3. Descriptive Analysis of English Listening Comprehension Test

Deskriptive Statistics								
	N	Range	Minimum	Maximum	Sum	Mean	Std. Deviation	Variance
Listening Comprehension	30	58	42	100	2250	75.00	14.472	209.448
Valid V (listwise)	30							

To ensure that the empirical dataset satisfied the strict mathematical assumptions necessary for parametric inferential testing, two prerequisite tests were conducted using SPSS version 26. First, the Shapiro-Wilk test was chosen to evaluate data normality due to its recognized statistical power for small to moderate sample sizes. The analysis yielded significance values (p-values) of 0.170 for listening fatigue (statistic = 0.950), 0.060 for vocabulary size (statistic = 0.933), and 0.116 for English listening comprehension (statistic = 0.944). Because all three significance values exceeded the standard threshold of 0.05 ($p > 0.05$), the dataset met the assumption of normal distribution. The complete results of the Shapiro-Wilk normality test for all research variables are presented in Table 4 below.

Table 4. Result of Normality Test

Tests of Normality						
	Kolmogorov-Smirnov			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Listening Fatigue	.124	30	.200*	.950	30	.170
Vocabulary Size	.126	30	.200*	.933	30	.060
Listening Comprehension	.167	30	.033	.944	30	.116

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Second, linearity tests were executed to verify whether linear relationships existed between each independent variable and the dependent variable. For the first pair, the Deviation from Linearity test yielded an *F*-value of 0.751 with a significance value of 0.709 for listening fatigue and English listening comprehension. Since the significance value was strictly greater than 0.05 ($p > 0.05$), the relationship between listening fatigue and English listening comprehension was confirmed to be linear. The complete results of the linearity test for this variable pair are presented in Table 5 below**.**

Table 5. Linearity Test Result for Listening Fatigue and Listening Comprehension

ANOVA Table							
			Sum of Squares	df	Mean Square	F	Sig.
Listening Comprehension* Listening Fatigue	Between Groups	(Combined)	3.479.083	17	204.652	.946	.553
		Linearity	881.457	1	881.457	4.076	.066
		Deviation from Linearity	2.597.627	16	162.352	.751	.709
	Within Groups		2.594.917	12	216.243		
	Total		6.074.000	29			

Similarly, for the second pair, the Deviation from Linearity test yielded an *F*-value of 2.361 with a significance value of 0.054 for vocabulary size and English listening comprehension. Because the significance value also exceeded the 0.05 threshold ($p > 0.05$), a linear relationship was likewise established between vocabulary size and English listening comprehension. Consequently, all parametric prerequisites were fulfilled, justifying the application of Pearson bivariate correlation and multiple correlation analyses. The complete results of the linearity test for this variable pair are presented in Table 6 below.

Table 6. Linearity Test Result for Vocabulary Size Test and Listening Comprehension

ANOVA Table							
			Sum of Squares	df	Mean Square	F	Sig.
Listening Comprehension* Vocabulary Size	Between Groups	(Combined)	5,286.133	12	440.511	9.505	.000
		Linearity	4,082.368	1	4,082.368	88.086	.000
		Deviation from Linearity	1,203.765	11	109.433	2.361	.054
	Within Groups		787.867	17	46.345		
	Total		6,074.000	29			

The Relationship between Listening Fatigue and English Listening Comprehension

To answer the first research question regarding the individual correlation between listening fatigues and English listening comprehension, a bivariate Pearson correlation analysis was conducted. The statistical test yielded a correlation coefficient (r) of -0.381 with a 2-tailed significance value (p-value) of 0.038. Because the significance value is less than the standard significance level of 0.05 ($p < 0.05$), the correlation is statistically significant. The negative direction of the coefficient indicates an inverse relationship, meaning that as student listening

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fatigue increases, their English listening comprehension performance decreases significantly. The complete results of the Pearson bivariate correlation analysis between listening fatigue and English listening comprehension are presented in Table 7 below.

Table 7. Pearson Correlation Results of Listening Fatigue and Listening Comprehension

Correlations			
		Listening **Comprehesion**	Vocabulary Size
Listening Comprehension	Pearson Correlation	1	0,820
	Sig. (2-tailed)		0,000
	N	30	30
Vocabulary Size	Pearson Correlation	0,820	1
	Sig. (2-tailed)	0,000	
	N	30	30
**Correlation is significant at the 0.01 level (2-tailed).			

This results provides direct empirical support for cognitive depletion theories and cognitive load models in auditory processing (Brännström et al., 2021; Davis et al., 2021). Spoken language comprehension is an intensive cognitive endeavor that requires continuous acoustic decoding, phonological processing, working memory maintenance, and real-time semantic integration. When vocational high school students undergo continuous classroom instruction, their cognitive resources are progressively depleted. In listening to announcement texts, students are required to isolate fast-paced, dense details such as flight or train times, platform numbers, and procedural instructions. Elevated mental fatigue restricts working memory capacity, slows auditory processing speed, and increases susceptibility to internal distractibility. As cognitive overload sets in, students experience temporary breakdowns in auditory retention, preventing them from holding transient acoustic signals in working memory long enough to extract accurate meaning, which directly depresses their overall comprehension scores.

The Relationship between Vocabulary Size and English Listening Comprehension

To address the second research question regarding the individual correlation between vocabulary size and English listening comprehension, a bivariate Pearson correlation analysis was performed. The analysis produced a correlation coefficient (r) of 0.820 with a 2-tailed significance value (p-value) of 0.000. Because the significance value is well below the 0.05 threshold ($p < 0.05$), there is a statistically significant, exceptionally strong positive correlation between vocabulary size and English listening comprehension. The summary of the Pearson bivariate correlation analysis between vocabulary size and English listening comprehension is presented in Table 8 below.

Table 8. Pearson Correlation Results of Vocabulary Size and Listening Comprehension

Correlations			
		Listening Fatigue	Listening Comprehension
Listening Fatigue	Pearson Correlation	1	-0,381
	Sig. (2-tailed)		0,038
	N	30	30
Listening Comprehension	Pearson Correlation	-0,381	1
	Sig. (2-tailed)	0,038	
	N	30	30
*. Correlation is significant at the 0,05 level (2-tailed).			

This result aligns with established second language acquisition literature identifying lexical knowledge as a major predictor of receptive skill performance (Alshehri, 2023; Sari et al., 2026). In spoken language processing, vocabulary knowledge functions as an essential linguistic foundation. A broad receptive vocabulary size allows learners to perform rapid lexical matching, mapping acoustic signals to stored semantic representations almost instantly. In the context of announcement texts, which rely heavily on specific functional terminology and low-redundancy phrasing, students with a rich vocabulary repository experience rapid, automatic word recognition. This automaticity reduces the cognitive effort required for lower-level linguistic decoding, preserving vital working memory capacity for higher-level comprehension tasks, such as synthesizing contextual cues and making logical inferences during test administration.

The Simultaneous Relationship between Listening Fatigue, Vocabulary Size, and English Listening Comprehension

To address the primary research question regarding the simultaneous relationship between listening fatigue and vocabulary size as independent variables and English listening comprehension as the dependent variable, a multiple correlation analysis was executed. The analysis generated a multiple correlation coefficient (R) of 0.829, accompanied by an F-change significance value (Sig. F Change) of 0.000. Because the significance value is well below 0.05 ($p < 0.05$), the null hypothesis (H0) is rejected and the alternative hypothesis (Ha) is accepted. This confirms a statistically significant and very strong simultaneous relationship among listening fatigue, vocabulary size, and English listening comprehension. Furthermore, the coefficient of determination (R^2) was calculated at 0.687, indicating that listening fatigue and vocabulary size jointly account for 68.7% of the total variance in students' listening comprehension performance, while the remaining 31.3% is governed by unexamined external variables such as acoustic quality, background noise, topic familiarity, or test anxiety. The complete results of the multiple correlation analysis among all three research variables are presented in Table 9 below.

Table 9. Result of Multiple Correlation Analysis

Model Summary									
						Change Statistics			
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	.829	.687	.664	8.392	.687	29.627	2	27	.000

Theoretically, these empirical results directly support the multidimensional listening comprehension framework proposed by Mathumathi et al. (2024), which posits that listening performance is governed by a complex interplay of cognitive, affective, and contextual dimensions. The results prove that cognitive capacity (vocabulary size) and affective-psychological conditions (listening fatigue) do not function in isolation. Although a large vocabulary size provides students with the requisite linguistic tools to parse spoken input, its functional execution depends heavily on the learner's available cognitive energy. When high mental fatigue sets in, emotional exhaustion and impaired concentration prevent learners from

effectively accessing their stored lexical knowledge. Conversely, when listening fatigue is kept low, cognitive processing remains fluid, enabling students to fully deploy their vocabulary baseline to achieve optimal auditory comprehension.

Pedagogical Implications and Limitations

The practical implications of these results offer valuable guidance for English language instruction, particularly within vocational secondary education. Given that vocabulary size and listening fatigue jointly explain 68.7% of listening success, language pedagogy must adopt an integrated approach that balances linguistic input with cognitive workload management. First, vocabulary instruction should go beyond rote memorization by focusing on high-frequency oral expressions and functional vocabulary commonly present in real-world informational texts. Second, educators must actively structure listening tasks to mitigate mental exhaustion. Teachers can reduce listening fatigue by incorporating brief inter-task rest intervals, using clear audio recordings with adjusted delivery speeds, and utilizing pre-listening activities to activate schema, thereby reducing the real-time cognitive burden placed on students during listening activities.

Despite these valuable pedagogical implications, several limitations of this research should be acknowledged. First, the scope of the study was specifically restricted to short informational spoken texts, namely announcement texts, which may differ in cognitive demand compared to extended interactive dialogues or academic lectures. Second, listening fatigue was evaluated through self-reported questionnaire data, capturing subjective perceptions rather than direct real-time physiological indicators. Future research could expand upon these results by examining broader oral discourse genres and incorporating objective physiological measures to assess cognitive strain during continuous auditory tasks.

CONCLUSION

This study provides empirical evidence on the significant interplay between listening fatigue, vocabulary size, and English listening comprehension among vocational high school students. Rather than viewing listening comprehension solely as a linguistic decoding process, the results articulate that students' ability to comprehend spoken announcement texts is simultaneously governed by their cognitive baseline (vocabulary size) and psychological-affective condition (listening fatigue). The multiple correlation analysis confirmed a very strong and statistically significant simultaneous relationship ($R = 0.829$, $p = 0.000$), with both independent variables jointly accounting for 68.7% of the total variance in listening performance ($R^2 = 0.687$). These results validate the theoretical premise that vocabulary size and mental fatigue do not function in isolation; a broad vocabulary baseline equips students to process spoken input efficiently, but its functional execution during real-time listening depends heavily on available cognitive energy.

These conclusions offer important practical implications for English language pedagogy in vocational secondary education. To optimize listening instruction, educators must move beyond isolated lexical drills and adopt an integrated instructional approach that balances targeted vocabulary development with proactive cognitive workload management. Teachers are advised to emphasize high-frequency functional expressions found in informational genres while structuring listening tasks to mitigate mental exhaustion such as incorporating brief rest intervals,

pacing audio delivery, and using pre-listening activities to activate schema. For students, developing self-awareness regarding cognitive endurance alongside proactive vocabulary building outside the classroom is crucial to preventing auditory overload. Finally, to build upon these results, future research is encouraged to investigate extended conversational genres, employ experimental or mixed-method designs to establish direct causality, and incorporate additional internal or physiological variables to further enrich the understanding of EFL listening comprehension.

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