LANGUAGE APTITUDE AND LISTENING COMPREHENSION: A STUDY OF EFL STUDENTS' PERFORMANCE

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ABSTRACT

The present research investigates the connection between students' language aptitude and their listening comprehension and further examines which specific aptitude components are most closely linked to listening performance. In order to address these objectives, a quantitative correlational design was employed. This research involved seventy-two participants from a Senior High School, selected randomly by clusters to minimize the bias potential. The data were collected through two instrument tests; LLAMA Aptitude Test and Self-made Listening comprehension test that were administered to the participant in two different sessions. The results of those tests were then analyzed by using Spearman's rho correlation, as the data did not follow a normal distribution. The results from the analysis demonstrated a moderate, yet significant, positive association between language aptitude scores and listening comprehension, with a coefficient of .441. Furthermore, among the four subtests, sound recognition (LLAMA D) and grammatical inference (LLAMA F) showed significant correlations with listening comprehension, while sound symbol recognition (LLAMA E) showed a weak yet still showed significant correlation with listening. However, vocabulary learning (LLAMA B) did not demonstrate a meaningful relationship. These findings suggest that successful listening comprehension relies more heavily on phonological and grammatical processing skills rather than simple vocabulary memorization. The findings offer practical insights for language teaching, emphasizing the need to develop learners' sound processing and grammar inference abilities to improve listening skills.
Keywords: Language Aptitude; Listening Comprehension; LLAMA Aptitude Test

ABSTRAK

Penelitian ini mengkaji hubungan antara kemampuan berbahasa siswa dengan pemahaman mendengarkan mereka, serta menelaah lebih lanjut komponen aptitude spesifik mana yang paling berkaitan erat dengan performa mendengarkan. Untuk mencapai tujuan tersebut, penelitian ini menggunakan desain kuantitatif korelasional. Penelitian ini melibatkan tujuh puluh dua peserta dari sebuah Sekolah Menengah Atas yang dipilih secara acak berdasarkan klaster untuk meminimalkan potensi bias. Data dikumpulkan melalui dua instrumen tes, yaitu LLAMA Aptitude Test dan tes pemahaman mendengarkan yang dibuat sendiri, yang diberikan kepada peserta dalam dua sesi berbeda. Hasil dari kedua tes tersebut kemudian dianalisis menggunakan korelasi Spearman's rho, karena data tidak berdistribusi normal. Hasil analisis menunjukkan adanya hubungan positif yang sedang namun signifikan antara skor kemampuan berbahasa dan pemahaman mendengarkan, dengan koefisien sebesar 0,441. Lebih lanjut, dari keempat subtes yang ada, pengenalan bunyi (LLAMA D) dan inferensi gramatikal (LLAMA F) menunjukkan korelasi yang signifikan dengan pemahaman mendengarkan, sementara pengenalan simbol bunyi (LLAMA E) menunjukkan korelasi yang lemah namun tetap signifikan. Namun demikian, pembelajaran kosakata (LLAMA B) tidak menunjukkan hubungan yang berarti. Temuan ini menunjukkan bahwa keberhasilan dalam memahami mendengarkan lebih bergantung pada keterampilan pemrosesan fonologis dan gramatikal dibandingkan sekadar menghafal kosakata. Temuan ini juga memberikan wawasan praktis bagi Pengiran bahasa, dengan men Kankan pentingnya pengembangan kemampuan pemrosesan bunyi dan inferensi tata bahasa untuk meningkatkan keterampilan menyimak.
Kata kunci: Bakat Bahasa; Kemampuan Menyimak; Tes Bakat LLAMA

INTRODUCTION

Listening is the initial process in language learning where individuals absorb, understand, and interact with language input. It involves an active process of receiving, interpreting, and creating meaning from spoken language. This is in line with Horwitz's definition that states listening is a receptive skill that involves the ability to comprehend and extract meaning from speech communicated by others (Horwitz, 2020). In other words, listening is more than simply hearing sounds; it requires focused attention and the ability to grasp the meaning conveyed by the speakers. This process is also known as listening comprehension. Listening comprehension is an ability to understand the spoken language that is presented through various utterances and oral texts, which entails both interpreting and deriving meaning from what is heard (Kim & Pilcher, 2016).

Listening comprehension serves as one of the fundamental skills in the process of acquiring a new language. This skill enables individuals to grasp and construct meaning from spoken language, facilitating effective communication and supporting the development of other language skills (Goh & Vandergrift, 2021). However, it is important to note that listening comprehension is one of the most challenging skills to master due to its implicit nature (Bang & Hiver, 2016) and complexity in understanding the sounds and meanings being conveyed. Moreover, listening involves a real-time process that does not allow for reviewing, repeating, or controlling the speed of information delivery. This requires listeners to rely on their strong phonological skills, quick working memory, and sensitivity to intonation and stress to grasp meaning effectively (Vandergrift & Baker, 2015, 2018). Due to these difficulties, the individual's success in mastering this ability tends to vary; while some develop strong listening skills, others may struggle.

Despite being one of the key goals in English language instruction, many learners still face challenges in developing adequate listening skills. Many students still struggle to interpret even basic spoken input. This gap suggests that the listening objectives outlined in educational frameworks are not fully met in practice, highlighting the need to investigate the factors that may contribute to students' varying degrees of listening comprehension. This interpretation is also supported by preliminary interview data collected from several tenth-grade students in a senior high school. Most of them reported that listening was the most difficult English skill to master. Most of them stated that they often misunderstood the spoken language due to unclear pronunciation, unfamiliar words, or fast delivery speed, being distracted by surrounding noise during listening activities, and confusion in catching and interpreting what they heard. These findings point to the complex nature of listening comprehension and highlight the importance of identifying the underlying factors that affect students' listening performance.

Based on that phenomenon, it becomes an interesting thing to investigate what factors may affect individuals' success in mastering listening skills. Many studies have examined several factors involved in individuals' success in learning listening comprehension. Most prior studies highlight the presence of individual differences or learner variability as a major factor in determining language learning success, including listening. These individual differences consist of auditory discrimination, metacognitive awareness, and working memory. The ability to receive and distinguish sounds, auditory discrimination, was reported to have a correlation with listening comprehension with coefficients of 0.22 (Vandergrift & Baker, 2015) and 0.33 (Vandergrift & Baker, 2018), which is considered a weak relation. This indicates that discrimination skills may not be the primary factor influencing listening comprehension success. Furthermore, metacognitive awareness, which makes individuals more aware of how they think, is reported to have correlations with listening comprehension with coefficient of 0.306, 0.64, 0.39 (In'nami, Cheung, Koizumi, & Wallace, 2023; Payaprom, 2023; Robillos & Bustos, 2022). Based on this result, it can be said that a person with good metacognitive awareness would perform better in listening. In addition, working memory contribute meaningfully to listening comprehension, with correlation coefficients of 0.64 and 0.871 (Masrai, 2020; Namaziandost, Hafezian, & Shafiee, 2018), suggesting that people with stronger working memory tend to achieve better in listening outcome. Other individual differences, such as vocabulary knowledge (Ha, 2021; Masrai, 2020; Vandergrift & Baker, 2018), listening strategy (Anggraeni, Sugiarto, & Rasuan, 2023; Mahdavy & Namavar, 2023) and motivation (Bang & Hiver, 2016) are also identified as the factors that correlates with learners' listening comprehension skills.

In addition to the six factors mentioned above, language aptitude, which is a part of individual differences, may also play a role in determining individuals' success in listening comprehension because it can affect how quickly and efficiently one masters a particular language. In other words, individuals with high language aptitude tend to learn languages more easily, particularly in mastering listening skills. Language aptitude refers to "a specific talent for learning foreign languages, which exhibits considerable variation between learners" (Dörnyei & Skehan, 2003). Carroll, considered the founding figure of language aptitude research, defined language aptitude as the initial condition of a person's readiness and capacity to learn a foreign language and the possible ease of doing so (John Bissel Carroll, 1981). Language aptitude is typically broken down into four distinct components, namely phonemic coding ability, associative memory, grammatical sensitivity, and inductive language learning ability (John Bissel Carroll, 1965). Skehan (1998) later revised Carroll's framework into three categories: auditory ability, linguistic ability, and memory ability. Based on these theories, language aptitude is believed to support individuals in understanding linguistic input such as grammar and sentence structures, discriminating and interpreting sounds, and effectively recalling previously learned information. These abilities are essential in acquiring a new language, particularly in improving listening skills.

Several scholars have attempted to identify which specific components of language aptitude play the most significant role in listening comprehension. Among these, phonetic coding ability or auditory discrimination has consistently been found to have the strongest correlation with

listening comprehension. This finding is suggested by Muñoz (Muñoz, 2014), Roehr-Brackin (2019), and Sarah & Sok (2022) who used MLAT-E to assess this variable. They found that finding rhyme, the ability to identify and process speech sounds had the highest correlation with listening compared to the other subtests. Furthermore, Wei (2019), who tested this variable with LLAMA, found that LLAMA E (sound-symbol recognition) had the highest correlation than the other subtests. Similar to this, Duman et al (2021), showed that llama D (sound recognition) had a highest correlation, which both of LLAMA D and LLAMA E are refers to test phonetic coding ability or auditory discriminations ability. Supporting this trend, Vandergrift and Baker (2015, 2018) found that auditory discrimination skills were significantly associated with listening comprehension. These findings suggest that the ability to perceive and process auditory input is a key component influencing listening ability.

Based on those findings, it is important to know why language aptitude can be connected with listening. Listening comprehension is a multifaceted cognitive process involving several interconnected components. These include the ability to recognize and process pronunciation features, recognize word connections in fluent speech, deal with speed, intonation and rhythm, identify and segment sound into meaningful unit, understand grammar and sentence structures, retrieve and interpret vocabulary, and manage information in real-time using working memory (Lennon, 2021; Vandergrift & Baker, 2018). In addition, listening also involves the skills to understand the meaning and ideas of spoken input store and recall every detail of information and infer the meaning of information (Brown, 2006). These abilities essentially require linguistic cognitive resources, many of which are closely related and can be measured by the components of language aptitude. For example, the ability to understand and segment speech sounds aligns with phonetic coding ability, while understanding grammatical structures is closely related to grammar sensitivity or language analytic ability. In addition, the demand to store information and reprocess it involves working memory. Therefore, the relationship between language aptitude and listening comprehension can be better understood by recognizing how the basic skills required in listening reflect the components that language aptitude tests aim to measure.

The given theoretical framework suggests that language aptitude and listening comprehension are interconnected. It is assumed that individuals with higher language aptitude tend to achieve higher outcomes listening comprehension, as they are more capable of recognizing linguistic patterns, retaining auditory input, and interpreting meaning in real time. However, it is difficult to justify this assumption due to the limited studies that have investigated this relationship. The study of the association between language aptitude and listening is an under-investigated area. Li (2016) carried-out a meta-analytic study synthesizing existing research about language aptitude over five decades with a total of 66 research, and found only 9 research that explored the link between language aptitude and listening. The result from those studies showed a weak relationship (r=0.30) between these variables. Other studies have also observed varying degrees of correlation between language aptitude and (L2) listening skills in EFL contexts. For example, Nagata et al reported a moderate relationship (r=0.40 and 0.60) between language aptitude and listening

(Nagata, Aline, & Ellis, 1999). On the other hand, Sáfár and Kormos found a weaker connection (r=0.11) between language aptitude and listening (Sáfár & Kormos, 2008).

Currently, the researcher only found a few research that discuss the connection between language aptitude and listening. However, the result from these research showed inconsistent in the findings. Several researches indicate a significant correlation between language aptitude and listening comprehension (Chang & Zhang, 2023; Collins, 2020; Sok & Shin, 2022). In contrast, other researches show that language aptitude does not have a significant relationship with listening comprehension (Duman et al., 2021; Véliz-Campos, Cerda-Oñate, Biedroń, Rojas-Barahona, & Veliz, 2024; Zhang, 2020). As a result, the findings remain **inconclusive**, and an **evidential gap** persists within the existing body of literature. These inconsistencies suggest that the scope of the relationship between language aptitude and listening comprehension is still unclear and require further investigation. Moreover, the populations examined in those studies were predominantly limited to elementary students, university students, and pre-service teachers. Notably, none of the previous research specifically targeted senior high school students as the focus of investigation. This gap highlights the need for further research involving this particular group, as senior high school students represent a critical stage in language development where academic demands and language exposure significantly increase. Therefore, this study seeks to address this gap by re-examining the link between these variables, within different population as a novel contribution. This investigation is hoped to deliver more concrete scientific evidence to clarify the nature of this relationship.

This research was conducted to discover whether or not there is a significant correlation between students' language aptitude and listening comprehension. In addition, this study seeks to determine which of the four components of language aptitude is most strongly correlated with listening comprehension. This is important to better understand which specific cognitive ability plays the most crucial role in listening, and to provide practical insights for more focused and effective language teaching strategies. By knowing this relationship, it is hoped that teachers can adapt learning methods that can cover students' abilities and learning objectives in order to enhance the learning outcomes.

LITERATURE REVIEW

1. Language Aptitude

Language aptitude refers to a set of cognitive abilities that significantly affect an individual's capacity to learn a new language. According to Li and Zhao, these abilities not only predict how quickly someone can learn a new language but also the level of proficiency they can ultimately achieve (S. Li & Zhao, 2021). The term language aptitude was first introduced by John B. Carroll along with his colleague Stanley Sapon in the 1950s, coinciding with the development of the most widely used measurement tool for language aptitude: the Modern Language Aptitude Test (MLAT). According to Carroll, language aptitude refers to certain cognitive abilities that an individual possesses, which make it easier for them to learn a second or foreign language. This ability allows individuals to understand and assess the various factors that make some people able

to learn a language more quickly and efficiently than others, provided that all other variables are considered equal (John B Carroll, 1990; Wen, Skehan, & Sparks, 2022). Furthermore, Carroll and Sapon defined language aptitude as a cognitive capacity that serves to estimate an individual's potential to acquire a foreign language more successfully than others, given a specific timeframe and learning context (John Bissel Carroll & Sapon, 2002). Based on Carroll's definition, we can infer that language aptitude is a specialized set of cognitive skills playing a crucial role in language learning as it can predict someone's speed and ease in acquiring new language. Nevertheless, it is essential to understand that language aptitude is not a definitive factor in determining whether an individual can or cannot learn a new language (L. Li & Luo, 2019, p. 34).

2. Language Aptitude Component

According to Carroll, there are four components of language aptitude which consist of phonetic coding ability, grammatical sensitivity, inductive learning ability and associative memory (John Bissel Carroll, 1964). Phonetic coding is Phonetic coding refers to the capacity to recognize individual sounds, connect them with their corresponding symbols, and remember these connections. Learners who possess strong phonetic coding skills are able to store these sound-symbol associations in their short-term memory, which can later transfer to intermediate and long-term memory (Stansfield & Reed, 2019, p. 16). Grammatical sensitivity refers to an individual's ability to work with grammatical structures by identifying and interpreting the roles that words play within a sentence. Inductive language learning ability involves the skill to deduce linguistic patterns, structures, and rules from unfamiliar language input, with minimal instruction or guidance. This ability enables learners to internalize language rules through exposure rather than through direct explanation. Associative memory is the cognitive skill that allows individuals to connect specific stimuli with suitable responses—for example, linking vocabulary from one's first language with its equivalent in the target language. This function supports more efficient vocabulary recall, which in turn enhances both fluency and comprehension in language learning (Biedroń, 2023, p. 55).

Another perspective came from Skehan (1998) who simplified Carroll's four components of aptitude. Skehan's models of aptitude consist of three components; auditory processing ability, language analytic ability, and working memory (Skehan, 1998). Auditory processing ability is basically similar to phonetic coding ability by Carroll. Language Analytic Ability is similar to Carroll's grammatical sensitivity and inductive learning. Memory Ability is similar to Carroll's associative memory, which concerned with retrieval, and with the way elements are stored. These three or four cognitive abilities are considered to be meaningful indicators of potential success in second language acquisition. Individuals who demonstrate strong performance in one or more of these areas are generally thought to have a learning advantage when it comes to acquiring a second language(Gass & Selinker, 2008, p. 418).

3. Listening Comprehension

Listening comprehension plays a crucial role in the process of language learning. It requires not only the ability to hear sounds but also to understand and analyze the information conveyed. It involves the comprehension of language at multiple levels, including words, phrases, clauses, sentences, and extended discourse (Namaziandost et al., 2018). Listening comprehension refers to the ability of individuals to understand and interpret spoken language (Aryadoust, Kumaran, & Ferdinand, 2020, p. 139). According to Buck, listening comprehension involves the capability to efficiently and automatically process continuous and authentic spoken language in real time (Buck, 2000). This ability enables listeners to grasp the clear linguistic information presented in the speech as well as to draw logical inferences that are directly supported by the content. He further explained that listening comprehension is a dynamic process in which listeners actively interpret and make sense of spoken input by using their prior knowledge, while being influenced by various factors such as the speaker's characteristics, the context of the situation, and individual learner differences that can all impact how well the message is understood.

4. Learners Characteristics in Affecting Listening Comprehension

According to Bloomfield et al. (2010), listening comprehension is shaped by several important factors related to the listener's personal characteristics, including working memory capacity, metacognitive strategies, experience, and anxiety (Bloomfield et al., 2010). Working memory refers to the listener's ability to temporarily store and process incoming information. Individual with higher working memory capacity tend to be more efficient in attending to, holding, and interpreting what they hear, which helps them understand more when listening to a second language. In addition, metacognitive awareness also plays a role in affecting listening. Listeners who actively apply metacognitive strategies, such as avoiding mental translation, focusing on key words, or anticipating what might be said next, often achieve better comprehension in their L2 listening. Moreover, experience also influences listening skills; prior exposure to the language, familiarity with different accents and speech patterns, vocabulary size, and background knowledge about topics, text structure, and culture all contribute to enhanced understanding. Experienced listeners are typically better able to infer meaning, even when encountering unfamiliar vocabulary or difficult pronunciation. Furthermore, anxiety can negatively affect comprehension. When a listener feels anxious or distracted, their ability to focus diminishes, making it harder to accurately grasp what is being said.

Another perspective comes from Vandergrift and Baker, who highlight that auditory discrimination and vocabulary knowledge are also crucial factors influencing listening comprehension (Vandergrift & Baker, 2015, p. 397). Auditory discrimination is the skill to perceive, distinguish, and process sounds heard through the ear. This ability enables listeners to detect subtle differences in speech sounds, such as distinguishing between similar phonemes, variations in intonation, stress, and other acoustic signals that convey meaning in spoken language. Vocabulary knowledge involves understanding and recalling words, including their meanings, forms, uses, and relationships with other words. This component is essential for language

proficiency and plays a central role not only in listening comprehension but also in overall language acquisition.

5. The Relationship between Language Aptitude and Listening Comprehension

Language aptitude plays an important role in listening comprehension, as it assumed that an individual with higher language aptitude is likely to have better achievement in listening and vice versa. Language aptitude component: phonetic coding, grammatical sensitivity, inductive learning and memory, are essential in language learning, particularly for listening skills. Together, these roles highlight the multifaceted influence of language aptitude in facilitating successful listening comprehension. Several components of language aptitude have been found to directly support the cognitive and perceptual processes involved in listening comprehension. For instance, phonetic coding ability or auditory processing ability becomes one of the essential skills in listening comprehension. Learners with strong abilities in this area tend to perform better in decoding spoken input, particularly in situations involving unfamiliar accents or fast speech.

Furthermore, working memory, framed in both Skehan's model of aptitude and Bloomfield's view of listening, serves as another significant point of this relationship. Working memory in aptitude facilitates the storage and manipulation of linguistic forms, while in listening; it enables the temporary retention of speech segments to support comprehension. This overlap suggests that individuals with stronger working memory capacities are li are likely to be more effective in handling complex or dense auditory input. In order to prove this theory, Vandergrift and Baker in 2015 and 2018 conducted a research and found that these variables, working memory, auditory discrimination and listening, showed a positive relationship even though it is considered weak (Vandergrift & Baker, 2015, 2018). This Finding suggests that working memory and auditory discrimination, as components of language aptitude, play a role in the process of listening comprehension. This indirectly supports the idea that listening comprehension and language aptitude are correlated, even though the relationship is not significant.

RESEARCH METHOD

This research was utilized in quantitative by employing correlational research design to investigate the connection between students' language aptitude and their listening comprehension. This research was conducted in the second semester of the 2024/2025 academic year and involved seventy-two of tenth grade students in two intake classes at a Senior High School in Bandar Lampung as the participants. To reduce the potential bias, the cluster random sampling technique was utilized to select participants. In this research, the participants were required to complete the tests to assess their language aptitude and listening comprehension. The tests instruments in this research were LLAMA Test and Listening Comprehension Test.

The **LLAMA Aptitude Test**, developed by Paul Meara in 2005, is designed to measure students' language aptitude. Unlike the MLAT, the LLAMA test is language-independent, making it accessible to test-takers of any language background and minimizing potential biases associated with L1 or L2. This feature is particularly valuable for cognitive assessments (Granena, 2013). The test is freely available online and can be administered on computers or smartphones. It is divided

into four subtests, every single test evaluating a different aspect of language learning: **LLAMA B** assesses vocabulary acquisition, **LLAMA D** tests sound discrimination, **LLAMA E** measures the ability to connect sounds with symbols, and **LLAMA F** evaluates the skills to inference the grammar. The test includes default study phases for all subtests except LLAMA D, with study phases lasting between two to five minutes. The scores for the LLAMA subtests range from 0 to 20 for LLAMA B, E, and F, and from 0 to 40 for LLAMA D (Meara, 2005). The subtests are scored separately and automatically, providing individual scores that represent specific aspects of language aptitude.

The listening comprehension test was used in this research to measure students' comprehension in listening. The test was designed in multiple-choice questions, with 45 items tested for validity and reliability. The instruments showed a high reliability coefficient of 0.911, (p>0.7), indicating that the data is reliable (Johnson & Christensen, 2014). The content of the test focused on procedural text and was made based on the syllabus of the English course, with the topic of healthy lifestyle. The audio materials used in this study included three dialogues and seven lectures that described the steps for adopting a healthy lifestyle.

In collecting the data, the researcher administered the tests in two separate meetings. The LLAMA aptitude test was given first, followed by the listening comprehension test in the next meetings. This arrangement was made to maintain the participants' focus and performance, as well as to accommodate time limitations during each data collection meeting. The results of both tests, represented by students' scores, were used and analyzed to explore the association between language aptitude and listening comprehension. To test this relationship, the researcher employed a non-parametric correlation analysis, Spearman's rho, as it does not require the assumptions of normality and linearity to be met (Nisbet, Miner, & Yale, 2018; Sihotang, Harahap, & Mazaly, 2024). The data did not follow the normality assumption, as indicated by the Kolmogorov-Smirnov test results. However, the assumption of linearity was fulfilled. Therefore, Spearman's rho was considered the most appropriate statistical tool for analyzing the data.

FINDING

The following section possesses the outcomes from the statistical studies that were established to investigate the association between students' language aptitude and listening comprehension. As previously mentioned, Spearman's rho was employed to determine the correlation between the two variables due to the data's non-normal distribution. The results are displayed in table 1.

Table 1 Spearman Correlation of Language Aptitude and Listening Comprehension

		LA	LC
Language Aptitude (LA)	Correlation Coefficient	1	.441**
	Sig. (2-tailed)		.000
Listening Comprehension (LC)	Correlation Coefficient	.441**	1

	Sig. (2-tailed)	.000	

**. Correlation is significant at the 0.01 level (2-tailed).

The result of Spearman's rho analysis highlighted a statistically significant positive correlation between students' language aptitude and their listening comprehension, with a coefficient of .441 (p < .01). The significance level (p < .01) further confirms that the relationship is unlikely to have occurred by chance, providing robust statistical evidence for the connection between these two variables. This result indicates that students with higher language aptitude tend to achieve better scores in listening comprehension. This finding aligns with the first research objective, which sought to determine whether a significant relationship exists between language aptitude and listening comprehension. The correlation coefficient of .441 suggests a moderate relationship between the two variables (Sugiyono, 2012; Supriadi, 2021), implying that language aptitude contributes meaningfully to students' performance in listening tasks.

Moreover, to address the second objective of the research, further investigation was carried out to examine the association among each subtest of the LLAMA aptitude test and listening comprehension. The aptitude subtest was individually analyzed in order to identify which component of language aptitude was most strongly associated with listening comprehension. Spearman's rho was also employed to assess the strength and significance of these relationships. The results are presented in table 2.

Table 2 Correlation between Llama Sub-test and Listening

	Llama D	Llama B	Llama E	Llama F	Listening
Llama D	-	.112	.464**	.174	**.452****
Llama B		-	.291*	.145	.046
Llama E			-	.288*	**.283***
Llama F				-	**.414****

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

The analysis described that among the four LLAMA subtests, **LLAMA D** showed the strongest correlation with listening comprehension, followed by **LLAMA F** and **LLAMA E**. LLAMA D (sound recognition) had a significant positive correlation with listening comprehension (ρ = .452, p < .01), which indicates a moderate relationship. Similarly, LLAMA F (grammatical inference) was also significantly correlated with listening comprehension (ρ = .414, p < .01). These results suggest that both sound recognition and grammatical pattern recognition are associated with students' listening comprehension. LLAMA E (sound-symbol correspondence) was discovered to have a weak correlation with listening comprehension (ρ = .283, p < .05), suggesting a limited but present connection between the ability to recognize sounds and listening comprehension. In contrast with the three subtests, LLAMA B (vocabulary learning) does not have significant correlation with listening comprehension (ρ = .046, p > .05), implying a weak and negligible relationship.

DISCUSSION

The research is designed to explore the correlation between students' language aptitude and their listening comprehension, as well as to identify which components of language aptitude test were most closely associated with listening comprehension. Based on the tests obtained, the mean score for total aptitude was 74.36 with the range of 72 (from 27 to 99), while the mean for listening comprehension was 85.24 with the range of 63 (from 37-100), indicating a relatively high performance on both variables across participants. Furthermore, these data was analyzed to explore for its correlation. Spearman's Rho analysis was employed and the findings revealed a moderate (ρ=.441), statistically significant correlation between overall language aptitude and listening comprehension. It indicates that students with higher language aptitude tended to perform better in listening tasks. This finding aligns with previous research, which also highlighted a significant connection between language aptitude and listening comprehension, with similar moderate correlation strengths of .58 (Sok & Shin, 2022) and high correlation strengths of .67 (Muñoz, 2014). Weaker correlations have also been reported in other studies, such as r = .29 (Véliz-Campos et al., 2024), r = .30 (S. Li, 2016), and r = .357 (Roehr-Brackin, 2019). These varying results imply that the degree of the association between language aptitude and listening comprehension could possibly be influenced by several factors, such as differences in participants' language proficiency levels, experiences, anxiety, the type of the listening tasks employed (Bloomfield et al., 2010), or the specific aptitude components measured. This highlights the complexity of listening comprehension as a skill that may draw on multiple cognitive abilities beyond aptitude alone.

In order to acquire better understanding of which specific aspects of language aptitude contribute most significantly to listening comprehension, this study further examined the association between each LLAMA subtest and listening comprehension. The result showed among the four aptitude components, LLAMA D (sound recognition) emerged as the strongest predictor, showing the highest correlation (ρ= .452, p < .01) with students' listening comprehension, with the mean score of **27.08** and the range of **35 (from 5 to 40)**, indicating that students generally performed well and suggests a **high degree of variability** in students' auditory discrimination abilities. In contrast to Peng Zhang (2020), who reported no significant relationship between LLAMA D and listening comprehension, this result supports previous studies that reported a weak (r=.28) but significant correlation between LLAMA D and listening (Duman et al., 2021) and a moderate (r=.40) correlation between LLAMA D and overall language proficiency (Artieda & Muñoz, 2016), which included listening as one of its components. This indicates that the ability to recognize and retain unfamiliar sound sequences plays a critical role in understanding spoken language. This finding is particularly relevant considering that listening comprehension heavily relies on phonological processing, including identifying word boundaries, intonation patterns, and phoneme distinctions in rapid speech (Vandergrift & Baker, 2015, 2018). Learners who are more adept at recognizing and mentally processing unfamiliar sound patterns may experience greater ease in decoding auditory input, especially in unfamiliar or fast-paced listening contexts.

Beyond sound recognition, the findings also highlight the role of grammatical inference ability in listening comprehension. Specifically, LLAMA F demonstrated a significant positive correlation ($\rho = .414$, $p < .01$) with students' listening comprehension, while other research showed zero (Duman et al., 2021) and weak ($r=.29$) correlation (Artieda & Muñoz, 2016). A moderate mean score of **14.92** and a range of **17** (from 3 to 20) were found in this test results. The relatively high average performance combined with substantial variability suggests that this skill was generally well-developed among many students but still varied enough to influence listening performance. This suggests that the ability to deduce grammatical patterns may contribute meaningfully to successful understanding of spoken texts. Grammatical inference allows learners to make sense of novel sentence constructions and identify syntactic patterns, which are essential when processing connected speech in real time. In natural listening situations, especially in academic or authentic contexts, listeners are often required to interpret meaning based on grammatical cues embedded in extended utterances or complex clauses.

Compared to LLAMA D and LLAMA F, **LLAMA E** (sound-symbol correspondence) demonstrated a weaker, yet still statistically significant correlation with listening comprehension ($\rho = .283$, $p < .05$) with a mean score of **14.18** and the range of **15** (from 4 to 19), indicates that most students scored at a moderate level, with some individual differences. This result suggests that although the ability to associate sounds with their corresponding symbols plays a role in listening, it may not be as central as other cognitive skills such as phonological recognition or grammatical inference. LLAMA E primarily measures how well a learner can link auditory input to its visual representation; an ability often associated with reading and pronunciation tasks rather than real-time aural processing. However, the significant correlation indicates that this skill is still relevant in listening comprehension. Being able to mentally map sounds onto symbolic forms can aid in internal decoding processes, especially when learners encounter new words or unfamiliar phoneme combinations. While not the strongest predictor, LLAMA E still contributes to the broader aptitude profile that facilitates comprehension of spoken language. The ability to mentally connect sounds with their corresponding symbols may help learners to process spoken language internally, particularly when they come across unfamiliar words or phoneme patterns.

In contrast to the other subtests, **LLAMA B** (vocabulary learning) did **not** show a significant correlation with listening comprehension ($p > .05$), indicating a negligible relationship between learners' short-term vocabulary retention ability and their listening performance, In contrast with other finding that found significantly moderate ($r=.40$) correlation between LLAMA B and Listening (Duman et al., 2021). Interestingly, it had one of the highest mean scores at **17.89** and the narrowest range of **11** (from 9 to 20), suggest that most students performed well and relatively uniformly on this task, leaving little room for differentiation in predicting listening. This finding may initially seem counterintuitive, as vocabulary knowledge is widely considered an essential component of listening comprehension (Ha, 2021; Masrai, 2020; Vandergrift & Baker, 2018). One possible explanation for this result is that LLAMA B emphasizes rote memorization of isolated words, which may not reflect the contextual and inferential skills needed for real-time listening. Listening comprehension often relies more heavily on the ability to interpret meaning

from context (Nation & Newton, 2009), rather than recalling recently memorized items. Furthermore, the nature of listening comprehension task may also be a contributing factor to the lack of correlation between listening comprehension and LLAMA B. In other words, if the listening task does not require the use of specific vocabulary items, but instead focuses purely on general listening comprehension skills, language aptitude may not be a strong predictor of success (Duman et al., 2021). This perspective helps explain why Nagata et al (1999), who employed a listening task centered on L2 target vocabulary, found a significant relationship between listening comprehension and language aptitude.

In summary, the findings of this study confirm that language aptitude plays a significant role in students' listening comprehension, particularly in areas such as auditory process, memory, and grammatical sensitivity. In the context of listening comprehension, learners with higher aptitude may be more capable of identifying patterns, retaining auditory input, and making quick inferences, all of which are essential for understanding spoken language in real time. While not all components of aptitude showed strong predictive power, the results reinforce the view that listening comprehension is supported by multiple cognitive processes rather than a single skill. These results contribute to the existing body of research by providing further empirical evidence from a new learner population.

CONCLUSION

This study set out to explore whether there is a relationship between students' language aptitude and their listening comprehension. The results showed that language aptitude does have a meaningful connection to listening ability, especially through skills like sound recognition and grammatical inference. However, not all components of aptitude contributed equally. Vocabulary learning aptitude, for instance, did not show a significant link to listening performance, suggesting that simply memorizing words may not be enough to succeed in listening tasks. Instead, more complex skills, such as decoding sounds and understanding grammar patterns, seem to play a bigger role. These findings highlight that listening comprehension is not just a matter of knowing words but involves a range of cognitive processes working together. However, it is important to notes that this research has some limitation. The participants were limited to one school setting; tenth grade students, which may not fully represent all types of learners. The study also relied on correlation analysis, which means it can show relationships but cannot confirm cause and effect among variables. Additionally, the listening test used in this study measured general understanding rather than focusing on specific skills like vocabulary memorization, grammar recognition or phonological decoding, which could have given a clearer picture of how each aptitude skill supports listening.

Future research could involve a wider range of students from different schools and backgrounds to see if the same patterns hold true. It would also be helpful to design listening tasks that specifically test grammar and sound processing abilities to better understand their roles. Longitudinal studies could show how language aptitude impacts listening development over time.

Finally, looking into other factors like memory skills, attention, and motivation would help build a more complete view of what makes someone a good listener.

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