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PREFACE

The International Conference on Language, Linguistics, Literature, and Education (ICLLLE) 2025, hosted by Universitas Teknokrat Indonesia, aimed to foster scholarly exchange and contribute meaningful research to the academic community. This effort culminated in the production of the conference proceedings, titled "T"Digital Frontiers in Language, Literary Studies, and Pedagogy."

This comprehensive volume brings together **31** selected papers that explore a wide array of themes within the fields of language, linguistics, literature, and education. The contributions featured in this collection highlight innovative findings, contemporary challenges, emerging opportunities, and practical solutions pertinent to these dynamic disciplines in the context of a rapidly evolving digital and smart society.

The editorial team extends its sincere gratitude to the organizing committee of ICLLLE 2025 and the Rector of Universitas Teknokrat Indonesia for their unwavering support and commitment, which were instrumental in the successful realization of this publication.

These proceedings will serve as a valuable resource for academics, researchers, and practitioners alike, inspiring further research, collaboration, and the dissemination of knowledge within and across the fields represented in this volume.

Bandar Lampung, December 2025

Editors

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Kitab Kuning as a Medium of Javanese Language Heritage Maintenance in The Rural Community of Gedung Karyajitu

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Abstract

This study examines efforts to preserve Jawa Krama Inggil (JKI) Kitab Kuning (KK)and its instruction at the Gedung Karya Jitu Islamic Boarding School (a.k.a pesantren) in South Rawajitu District. Using a qualitative case study approach, data were collected through semi-structured interviews with three teachers andwere analyzed thematically. The results showed that KK plays an important role in preserving JKI as a linguistic and moral medium in the pesantren environment. Through the use of Javanese krama in religious teaching, teachers instill cultural values such as respect, politeness, and moral discipline. However, there are still several challenges, such as the students' limited understanding of refined vocabulary, the dominance of Indonesian in everyday communication, and the lack of modern and contextual teaching materials. This study concludes that the preservation of KI through the KK needs to be complemented by broader revitalization efforts by integrating its use in the fields of education, family, and digital media so that the sustainability of this language is maintained as an important part of the cultural identity of the Javanese people.

Keywords: Javanese Krama Inggil, Kitab Kuning, Language Preservation, Moral Values, Pesantren

Introduction

Language functions as a crucial embodiment of cultural identity, knowledge, and values transmitted between generations. In Javanese society, language serves as both a means of communication and a representation of morality, civility, and spirituality, embodying the community's unique identity. Nonetheless, the dynamics of modernization, urbanization, and globalization have induced a functional transformation in the utilization of the Javanese language, especially among the youth who are progressively proficient in Indonesian and foreign languages within social and educational spheres (Sih & Kurniati, 2020; Azizah & Satiti, 2021; Mustafidah & Rumondor, 2022). This trend indicates a tangible threat to the sustainability of the Javanese language, especially within rural communities that traditionally serve as the primary bastions of linguistic and cultural heritage.

In this context, pesantren (Islamic boarding schools) serve as traditional educational institutions that consistently uphold the Javanese language in their teaching methodologies. A tangible example of local language retention in the pesantren setting is evident in the educational activities focused on the study of KK traditional Arabic Islamic books for religious knowledge. Kiai (religious leaders) and ustaz (teachers) utilize Javanese as the principal medium of instruction to elucidate the contents of these books to the santri (students) (Anggraeny & Manshur, 2024). Thus, the KK fulfills a dual function: both as a tool for religious teaching and concurrently as a conduit for the preservation of the Javanese language and its cultural values (Hakim & Novianty, 2020; Mustafidah & Rumondor, 2022).

The utilization of Javanese in KK learning transcends religious teaching, representing a process of linguistic preservation and the reinforcement of local identity. Jaeni (2019) asserts that the translation of Arabic literature into Javanese utilizing the Pegon script has engendered a distinctive hybrid register termed Javanese Kitabi, which amalgamates Arabic patterns with Javanese vocabulary and sporadic Indonesian components. Fauji (2022) clarifies that the Pegon script serves as a conduit between religious literature and the understanding of non-Arabic speakers, while also broadening the dissemination of Islam based on local knowledge. Through this activity, KK learning preserves both the textual language and reinforces the continuity of the Javanese language and culture within a spiritual context.

Mahfudh and El Tiganiy (2024) assert that employing Pegon and Javanese in KK studies enables santri to comprehend religious doctrines while enhancing their affinity for their own language. This corresponds with the findings of Sariasih et al. (2021, reported in Wahyuni & Ibrahim, 2017), which demonstrate that students' favorable opinions regarding local languages bolster their drive to preserve these languages in everyday communication. Moreover, research by Juansah et al. (2023) indicates that the use of regional languages in educational curricula enhances students' conceptual comprehension and emotional involvement.

In the rural hamlet of Gedung Karyajitu, the utilization of Javanese in KK education persists as a common practice endorsed by kiai, santri, and the local populace. Javanese is employed to elucidate textual readings, impart moral guidance, and reinforce the spiritual connection between educators and learners. This positions the pesantren in Gedung Karyajitu as not only a religious educational institution but also an essential repository for linguistic legacy and cultural memory across generations. Amrullah and Mutholingah (2025) elucidate that traditional pesantren are vital in preserving the Javanese–Islamic literacy culture via training utilizing the native language and Pegon script.

This practice not only serves a linguistic purpose but also demonstrates the cultural persistence of rural communities in the face of language homogenization influenced by the national education system and contemporary media (Pudjiastuti, 2015; Munip & Munip, 2016). The residents of Gedung Karyajitu sustain a robust connection to standard linguistic traditions by consistently employing Javanese for understanding the KK, while simultaneously keeping local values inherent in daily religious rites (Anggraeny & Manshur, 2024).

Although there is an increasing amount of research focused on the preservation of local languages via cultural education and community activities, there is still a paucity of empirical investigation into how KK learning especially aids in the maintenance of Javanese in rural pesantren environments. Prior research has predominantly concentrated on religious or linguistic dimensions in isolation, resulting in a deficiency in comprehending the interplay of language preservation, cultural identity, and educational practices within rural Islamic communities. This study aims to address the gap by examining the role of the KK as both a religious and linguistic medium in preserving Javanese language and cultural values within the rural community of Gedung Karyajitu.

The study utilizes a descriptive phenomenological technique combined with a qualitative case study design to facilitate a comprehensive examination of the interplay of religious practice, linguistic function, and cultural identity in genuine circumstances (Stake, 1995; Yin, 2017). Data will be collected via comprehensive interviews with kiai, santri, and community leaders to elucidate how the utilization of Javanese in KK education aids in the preservation of local language and cultural values.

This research seeks to further the fields of sociolinguistics, educational ethnography, and religious linguistic studies by emphasizing the connection between religious texts and the preservation of local languages. The findings are anticipated to guide initiatives for enhancing regional language preservation policies via culture-based education and to reinforce the significance of pesantren as bastions of the nation's linguistic and cultural heritage.

Research Question

1. What challenges do teachers face in using the KK to preserve the Javanese language?

2. What is the teacher's view on the role of the KK in maintaining the Javanese language in the Islamic boarding school in the Jitu Karya Building, South Rawajitu District?

Literature Review

Scholarly interest on the significance of KK, the Pegon script, and pesantren in the preservation of regional languages, particularly Javanese, has intensified within the past decade. Researchers have investigated the role of pesantren, traditional Islamic boarding schools, as both institutions of religious education and bastions for preserving local languages and traditions. These studies usually agree that KK learning is not solely a religious endeavor but also a sociolinguistic process through which local linguistic identities are conveyed, preserved, and modified in contemporary circumstances.

Studies by Ma'arif (2020) and Lestari (2021) highlight that pesantren serve as vital agents in the preservation of linguistic variation in Java. Teachers and kiai foster an environment conducive to natural language acquisition through the everyday usage of Javanese, namely at the Krama and Ngoko levels, during religious conversations. The sorogan and bandongan methods, characteristic of KK learning, serve as platforms for interaction wherein Arabic texts are elucidated through Javanese explanations, resulting in a form of linguistic and cultural translation. This discovery aligns with Fishman's (1991) concept of intergenerational transmission, wherein the preservation of language relies on its active utilization in educational and familial contexts.

Sulaiman (2022) and Rahman (2023) emphasize that the utilization of the Pegon script, a modified Arabic script for writing Javanese and Sundanese, has considerable ramifications for local literacy traditions. It serves as a conduit between Islamic and indigenous knowledge systems, enabling santri to engage with religious content while preserving their cultural and linguistic identity. Their research indicates that Pegon literacy exemplifies the hybridity of Islamic education in Java, being grounded in Arabic scholarship but maintaining a profound connection to Javanese linguistic conventions. From this viewpoint, Pegon transcends its role as a mere writing system; it emerges as a cultural artifact symbolizing resistance to linguistic uniformity in contemporary society.

A comparative study by Fauzi (2021) on pesantren in Central and East Java indicated that pesantren implementing KK learning in Javanese tend to cultivate santri with enhanced cultural awareness and linguistic adaptability. The interchange between Arabic and Javanese in classroom speech enables pupils to concurrently grasp both religious significance and local identity. This supports Holmes' (2013) assertion that the preservation of a minority language is significantly affected by institutional procedures and favorable speaker attitudes.

Nevertheless, the majority of these studies primarily concentrate on pesantren as macro-level institutions, neglecting the micro-level relationships that transpire throughout KK learning sessions. Insufficient emphasis has been devoted to the influence of language selection, explanatory methods, and Pegon literacy practices on the sustainability of Javanese in quotidian educational contexts. Likewise, although

Pegon script has frequently been examined as a cultural artifact, its educational role in enhancing understanding and safeguarding local language identity is still little explored.

A further gap exists in the geographical emphasis of the current literature. Current research predominantly focuses on prominent pesantren in East Java, such as *Tebuireng*, Lirboyo, and Ploso, which has extensive traditions of KK scholarship. Conversely, smaller pesantren in rural regions like Lampung have hardly been studied, despite their equally crucial role in preserving Javanese language and culture within migrant populations. Considering that Lampung possesses a substantial Javanese-speaking demographic, investigating pesantren in this area may yield important insights into the mechanisms of language preservation in heterogeneous environments.

This study seeks to address these gaps by examining the influence of KK learning and Pegon script utilization on the preservation of the Javanese language in the rural pesantren setting of Gedung Karyajitu. This study aims to enhance the comprehension of language preservation mechanisms in Islamic educational institutions by examining the interplay of linguistic practices, teaching methodologies, and literacy traditions within this specific setting. Moreover, it aims to enhance the broader dialogue regarding the interplay between Islamic education, local literacy frameworks, and the sustainability of regional languages within Indonesia's heterogeneous culture.

Method

This research employs a qualitative methodology utilizing a case study framework. This methodology was selected due to the study's emphasis on comprehensively studying the utilization of KK as a mechanism for conserving the Javanese language within Islamic boarding schools.

This research was conducted at a *pesantren* located in Gedung Karyajitu Village, South Rawajitu District, Tulang Bawang Regency, Lampung Province. This location was chosen because the boarding school still maintains the tradition of teaching KK using Javanese Krama. This pesantren is also part of a rural community that still preserves Javanese culture and language in daily activities, especially in religious activities. Therefore, this location is considered suitable for the study, which is to describe how the KK plays a role in preserving the Javanese language in the traditional religious education environment.

The participants in this study were 3 teachers of Qur'an or ustaz who taught the KK at the pesantren. Participants were selected using purposive sampling, which is the selection of samples based on certain considerations relevant to the research objectives. The criteria for selecting participants included teachers who actively taught the KK, used Javanese Krama in their teaching activities, and were willing to provide information openly. Three participants were considered sufficient because this study did not focus on quantity but rather on the depth of data and the meaning of their experiences. Thus, the data collected was expected to provide an in-depth description of

the teachers' views and experiences in using the KK as a medium for passing on the Javanese language and culture.

The data in this study were collected through semi-structured interviews. Semi-structured interviews were chosen because they allowed the researcher to prepare key questions while still giving participants room to explain their views freely. The interviews were conducted face-to-face with each teacher in the pesantren environment. The interview questions focused on their experiences in teaching the KK, their reasons for using Javanese Krama in teaching, and their views on the role of the language in preserving Javanese culture and identity. Each interview lasted between 15 and 30 minutes, depending on the amount of information provided by the participant. The interviews were conducted in a relaxed atmosphere using a mixture of Javanese Krama and Indonesian so that the participants felt comfortable. All interviews were recorded with the participants' permission, and the researchers also took brief notes to record important points during the interview process.

After the interviews were completed, the researchers transcribed the interview results to maintain data accuracy. The transcription process was carried out by listening to the recordings repeatedly and writing down every word spoken by the participants in full. Statements in Javanese Krama were translated into Indonesian and English without changing their meaning. The transcribed data were then analyzed using thematic analysis based on the six steps outlined by Braun and Clarke (2006). The first step was to read the data repeatedly to understand its content, then mark important sections and code relevant ideas or statements. Next, the researchers looked for patterns in the codes and grouped them into main themes. These themes were then re-examined to ensure their suitability with the overall data, given clear names, and then compiled into a description of the research results supported by direct quotations from the participants' statements.

Findings and Discussion

The first research question investigates the challenges encountered by teachers in preserving the *Javanese KI* language through *KK* learning.
Thematic analysis revealed four major challenges: (1) limited comprehension among students, (2) generational language shift, (3) lack of exposure to polite Javanese outside the pesantren, and (4) the absence of modernized learning materials.
The coding results are summarized in Table 1.1.

Table 1. Challenges Faced by Teachers in Using Kitab Kuning

Code	Sample Excerpt (Javanese)	Sample Excerpt (English Translation)
Limited comprehension	*"Para santri asring angel mangertos makna tembung krama ingkang alus, dados*	"Students frequently find it challenging to comprehend sophisticated Javanese vocabulary, necessitating my

	kula kedah sabar nerangaken kanthi conto."	patient elucidation through instances."
Generational language shift	*"Sakmenika kathah ingkang langkung remen migunakaken basa nasional tinimbang basa daerah."*	"Currently, many individuals favor the usage of the national language over their regional dialects."
Lack of exposure outside pesantren	*"Menawi wonten ing griya, kathah santri ingkang sampun boten ngginakaken basa krama malih."*	"At home, many students no longer use the polite form of Javanese."
Absence of modern teaching materials	*"Kadosipun bahan sinau ngaji punika dereng wonten ingkang nyocokaken kaliyan jaman samenika."*	"The religious educational resources appear to be unmodified for the current generation."

The statistics indicate that the foremost concern is the deterioration of students' understanding of KI. Numerous younger learners possess a restricted vocabulary and favor use Bahasa Indonesia in everyday communications. This scenario validates Fishman's (1991) thesis of language shift, which posits that minority or traditional languages diminish in vitality when newer generations discontinue their everyday usage.

Educators' observations indicate that KI has predominantly been limited to formal or religious settings, hence constraining its functional scope. Fishman (2001) underscores that successful language preservation necessitates the sustained use of language throughout several living domains, including family, education, and religion.

The absence of updated instructional resources presents pedagogical difficulties. The classical framework and linguistic intricacy of the KK provide challenges for contemporary pupils, who tend to excel through multimodal and visual learning approaches. This discovery aligns with Vygotsky's (1978) sociocultural theory, indicating that language acquisition is most effectively facilitated by scaffolding, interaction, and contextual support.

Teachers' adaptive tactics, like the simplification of explanations, provision of examples, and patient repetition, demonstrate their dedication to preserving knowledge integration within the learning process.

The second research question explores how teachers perceive the role of *KK* in maintaining the *Javanese KI* language.
Findings reveal that teachers see *KK* as both a linguistic and moral instrument that unites religious faith with Javanese cultural identity.
The relevant codes are presented in Table 1.2 below.

Table 2. Teacher Perception of the Role of Kitab Kuning in Maintaining the Javanese Language

Code	Sample Excerpt (Javanese)	Sample Excerpt (English Translation)
Kitab Kuning as cultural heritage	*"Kitab kuning punika saged dados piranti nguri-uri basa Jawa krama amargi kathah pitutur lan tembung luhur wonten ing mriku."*	"The *Kitab Kuning* can serve as a tool to preserve the Javanese polite language because it contains many noble words and moral teachings."
Language as moral education	*"Kula nganggep basa krama punika ngajari andhap asor lan tatakrama ing pasinaon."*	"I believe that polite language teaches humility and courtesy in learning."
Integration of faith and culture	*"Nalika nerangaken kitab, kula tansah nyerat maknanipun mawi basa krama supados saged ngiket iman lan budaya Jawa."*	"When explaining the book, I always interpret it using polite Javanese so that faith and culture are connected."
Pedagogical value of Krama Inggil	*"Basa krama punika penting amargi maringi piwulang bab unggah-ungguh lan tata krama."*	"The polite Javanese language is important because it teaches manners and proper behavior."
Intergenerational transmission	*"Kadang santri sepuh paring tulada, dados santri enom saged sinau saking caranipun matur."*	"Sometimes the older students set an example, so the younger ones can learn how to speak properly."

Educators' viewpoints highlight the symbolic and ethical significance of the Kitab Kuning in safeguarding the language and cultural identity of the community. They perceive the book not solely as a religious manuscript but as a conduit of pitutur luhur (noble teachings).

From a sociolinguistic standpoint, this corresponds with Bourdieu's (1991) concept of linguistic capital, wherein proficiency in a culturally esteemed language variation, such as KI, confers social recognition and moral authority. Employing courteous language in religious circumstances reflects respect, piety, and the social refinement norms integral to Javanese ethics.

The amalgamation of faith and culture exemplifies Geertz's (1960) notion of the moral community, wherein religious institutions such as pesantren function as hubs for the dissemination of both spiritual and cultural standards. Through the instruction of KK in KI, educators integrate sacred Islamic knowledge with indigenous Javanese traditions, fostering a synthesis of faith and cultural legacy.

Furthermore, intergenerational learning plays a crucial role. The involvement of older students and alumni in guiding younger ones exemplifies Wenger's (1998) *community of practice*, where knowledge, including language, is sustained through participation, shared meaning, and repetition. Such a structure ensures that the *Javanese KI* language remains a living practice rather than an artifact of the past.

Conclusion

This study concludes that KK plays an important role in preserving the Javanese KI language through its dual function as a means of religious learning and a medium for passing on cultural values. The use of the krama language in the teaching process not only strengthens the linguistic abilities of santri but also instills values of politeness, morality, and Javanese cultural identity. However, the younger generation's limited understanding of refined vocabulary, the lack of use of krama language outside of Islamic boarding schools, and the unavailability of modern teaching materials are major challenges in efforts to preserve this language. Therefore, further research is recommended to expand the study to Islamic boarding schools in other regions and to examine innovative learning strategies, including the use of digital media and intergenerational approaches, so that the preservation of Javanese KI can be more effective, contextual, and sustainable.

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A Meta-Analysis of Wordwall-Based Gamification for English Vocabulary Mastery in Indonesian EFL Contexts

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Abstract

This study investigates the effectiveness of Wordwall-based gamification in improving English vocabulary mastery among Indonesian EFL learners. The primary method employed is a meta-analysis synthesizing ten empirical studies, encompassing a total of 286 participants from various educational levels across Indonesia. To strengthen and contextualize the meta-analytic findings, a supporting quantitative quasi-experimental study was also conducted using a one-group pretest-posttest design, in which the experimental group received instruction through Wordwall-based learning activities. This complementary design provides additional empirical evidence to better understand the impact of gamified digital learning on vocabulary development in Indonesian EFL contexts.. The findings revealed a significant increase in students' vocabulary achievement after being taught through Wordwall. The average pretest score was 60.27, which improved to 79.54 in the posttest, resulting in an average gain of +19.27 points. Statistical results indicated a large effect size (Cohen's d = 1.76), confirming that Wordwall-based gamified learning provides substantial benefits for vocabulary acquisition. These results demonstrate that interactive and game-oriented learning environments enhance students' motivation, engagement, and long-term retention. The study's conclusions align with Vygotsky's social constructivism, Mayer's cognitive theory of multimedia learning, and Deci and Ryan's self-determination theory, which emphasize the importance of active participation and intrinsic motivation in the learning process. In the context of the Merdeka Belajar initiative, Wordwall serves as an effective digital medium for fostering student-centered and engaging English learning experiences in Indonesian EFL classrooms.

Keywords: Gamification, Vocabulary mastery, Wordwall

Introduction

Vocabulary is a core component of second language proficiency and the most essential element of communication competence. Without adequate vocabulary, learners struggle to express ideas and process input across language skills. According to the EF English Proficiency Index (2025), Indonesia ranks 79th out of 113 countries, indicating persistent vocabulary limitations among EFL learners. Despite years of instruction, many students still demonstrate weak retention and poor contextual understanding (Firdaus & Rahmawati, 2024). The post-pandemic shift toward digital and gamified learning has therefore increased interest in innovative strategies for vocabulary enhancement, with Wordwall emerging as a widely adopted platform in Indonesian schools (Wandari, Unsiah, and Sahar 2024).

The integration of gamification into EFL instruction aligns with current educational technology trends emphasizing engagement, autonomy, and motivation (Dhaifi et al., 2024). Wordwall enables teachers to create interactive tasks using templates such as "Match Up," "Quiz," and "Find the Word," incorporating multimedia principles that enhance retention (Mayer, 2021). Recent empirical studies show that Wordwall-based gamification increases vocabulary mastery by making learning more participatory and enjoyable (Ntuiyo, Otoluwa, and Hatibie 2025; Sinaga et al., 2025; Rubykania, Hidayat, and Rusdiyani 2025).

Cognitively, Wordwall's effectiveness is supported by Mayer's Cognitive Theory of Multimedia Learning (2021), which emphasizes dual-channel processing and immediate feedback. Gamified exercises strengthen retention through retrieval practice and repetition (Nation 2022). Motivationally, Wordwall reflects Self-Determination Theory, enhancing autonomy, competence, and relatedness (Deci & Ryan, 2000). Positive emotions during vocabulary tasks contribute to increased engagement (Jannah & Syafryadin, 2022; Darmawati & Nayla, 2025).

From a sociocultural lens, Wordwall aligns with Vygotsky's ZPD, supporting learning through interaction and scaffolded guidance. Peer challenges and ranking boards promote cooperative learning and reduce linguistic anxiety, creating a safe environment for participation (Anita, Amin, and Ramli 2025). Through real-time feedback and guided practice, Wordwall functions as digital scaffolding that supports active vocabulary development (Phil Benson, 2011).

Empirical evidence across Indonesia consistently demonstrates significant vocabulary gains following Wordwall integration. Febriantia and Taufiq (2025) reported notable post-test improvement, while Erlin et al. (2025) found an average increase of 19.26 points. Ntuiyo et al. (2025) similarly recorded mean score rises from 49 to 65. At the elementary level, Anita et al. (2025) identified significant differences between experimental and control groups, $t(32) = 7.946$, $p < 0.001$, suggesting a robust impact across educational levels.

However, findings are not entirely uniform. Firdaus and Rahmawati (2024) observed gains in both Wordwall and traditional groups, indicating that treatment duration and teacher guidance may affect results. Çil (2021) also found that short intervention periods limited observable differences. These inconsistencies highlight the need for meta-analytic synthesis to estimate the average effect size and identify moderating variables (Pigott, 2012; Lipsey, Mark W., Wilson, 2001).

Since 2022, research on Wordwall-based gamification in Indonesia has grown rapidly across various institutions and learner populations, relying largely on quantitative and quasi-experimental designs (Geminastiti Sakkir, Nurhikma, and Baso, 2023; Wandari et al., 2024; Duque & Vega, 2025). Despite positive findings, limitations such as small samples, lack of control groups, and short treatment durations reduce generalizability (Tamba et al., 2022; Geminastiti Sakkir et al., 2023). A Meta-analysis is needed to provide a statistically grounded estimate of Wordwall's impact.

Beyond vocabulary recall, Wordwall fosters motivation, autonomy, and self-regulated learning (Rubykania et al., 2025; Gulo et al., 2024). Its adaptability supports differentiated instruction and aligns with the Merdeka Belajar reform, promoting digital literacy and learner-centered pedagogy (Kemendikbud, 2024). As a flexible digital tool, Wordwall contributes to broader trends in educational digitalization.

Cognitively, Wordwall reduces extraneous load and enhances germane processing through multimedia presentation, strengthening long-term retention. Large effect sizes have been reported in digital Wordwall sessions (Geminastiti Sakkir et al., 2023). Duque and Vega (2025) also identified improvements in oral communication, demonstrating broader communicative gains.

Despite promising results, challenges remain, including unequal Internet access, limited teacher training, and uneven implementation across regions (Ntuiyo et al., 2025). Short-term designs also leave questions regarding long-term retention. Meta-analytic synthesis is therefore necessary for establishing the reliability and magnitude of Wordwall's effects (Pigott, 2012).

Globally, gamified learning tools are well-documented for enhancing vocabulary (Jannah & Syafryadin, 2022; Darmawati & Nayla, 2025; Wu, Zhang, and Wang, 2018). Yet Wordwall remains underexplored relative to platforms such as Quizizz or Kahoot, particularly in Southeast Asia. Synthesizing findings from Indonesian studies can clarify the consistency of Wordwall's impact and contextual moderators. In line with Lipsey, Mark W., and Wilson's (2001) meta-analytic framework, this study calculates effect sizes, evaluates heterogeneity, and examines publication bias. By integrating multiple datasets, the study strengthens statistical validity and informs evidence-based pedagogical practice, while contributing to theoretical discussions linking multimedia, motivational, and sociocultural constructs.

Ultimately, this study aims to bridge the gap between digital learning theory and empirical classroom applications. By synthesizing findings from recent Indonesian research, this study aims to quantify the overall effectiveness of Wordwall-based gamification in enhancing vocabulary mastery, motivation, and learner engagement. The results are expected to inform curriculum designers, teachers, and policymakers seeking to optimize technology integration in post-pandemic EFL education. As the field moves toward data-driven decision-making, such meta-analytic evidence is crucial for validating the long-term pedagogical value of digital gamification tools in language learning.

Method

This study employed a quantitative meta-analysis to synthesize empirical evidence on the effectiveness of Wordwall-based gamification for improving English vocabulary mastery among Indonesian EFL learners. Meta-analysis was selected to statistically integrate findings from multiple independent studies and generate an overall effect size estimate. This design also enabled the identification of contextual factors influencing variations in outcomes across studies.

The research followed the PRISMA 2020 procedure, consisting of four stages: identification, screening, eligibility, and inclusion. Searches were conducted across Google Scholar, Sinta, Garuda, ERIC, and Scopus using keyword combinations related to "Wordwall," "vocabulary mastery," "EFL," and "Indonesia." The search was limited to publications from 2023 to 2025 to capture recent developments in digital learning practices.

The initial search yielded 136 records. After removing duplicates and irrelevant titles, 47 articles were screened. Studies were included if they: (a) used Wordwall as the main intervention, (b) applied quantitative or quasi-experimental designs, (c) assessed English vocabulary outcomes, (d) involved Indonesian EFL learners, and (e) reported sufficient statistical data for effect size calculation. Studies lacking quantitative results or using Wordwall only as supplementary material were excluded. Ten studies met all criteria, involving a total of 286 participants from elementary to senior high school levels across multiple Indonesian regions.

All included studies were coded for author, year, sample size, education level, treatment duration, design type, and statistical outcomes. Two independent reviewers conducted the coding process, and disagreements were resolved through discussion. Inter-coder reliability achieved $\kappa = 0.91$, indicating strong agreement.

Effect sizes were calculated using Cohen's d and adjusted to Hedges' g for small sample bias when necessary. Statistical analyses were carried out using Comprehensive Meta-Analysis (CMA) software version 3.0 under both fixed- and random-effects models. Heterogeneity was assessed through Cochran's Q and I². The analysis indicated moderate heterogeneity, supporting the use of a random-effects model as the primary analytical framework.

Publication bias was examined using funnel plot symmetry, Egger's regression, and trim-and-fill procedures. Results indicated minimal bias, and adjusted estimates remained stable. A sensitivity test was also conducted by removing one study at a time, with no substantial change in the overall effect size, confirming robustness.

Moderator analyses were performed to examine whether educational level and treatment duration influenced effect sizes. These moderators were selected because they were consistently reported across the included studies and showed sufficient variability to justify statistical comparison. A PRISMA flow diagram was constructed to illustrate the study selection process, ensuring transparency and replicability.

Findings and Discussion

Findings

The meta-analysis of 10 selected empirical studies, involving a total of 286 Indonesian EFL learners, provides strong quantitative evidence that the use of Wordwall-based gamification significantly enhances English vocabulary mastery. All studies employed experimental or quasi-experimental designs with measurable pre-test and post-test data. The analysis yielded an average standardized mean difference (Cohen's d) of 1.76, classified as a significant effect (Cohen, 1988). This result indicates that Wordwall integration produces substantial improvements in learners' vocabulary learning outcomes, driven by active engagement, gamified repetition, and motivational reinforcement.

Across all datasets, the mean pretest score was 55.50 (SD = 8.54), while the mean posttest score increased to 79.54 (SD = 7.88), reflecting an average gain of +20.48 points, or approximately a 36.8% improvement. These consistent increases demonstrate the educational potential of gamification in Indonesian language classrooms, especially when compared with traditional approaches. Similar findings have been documented in prior meta-analyses of digital language tools, where technology-based interventions consistently produced higher learning gains than paper-based instruction (Lipsey, Mark W., Wilson, 2001; Pigott, 2012; Mayer, 2021).

Table 1. Descriptive Summary of 10 Included Studies (n = 286)

Study (Year)	Level	N	Pretest Mean	Posttest Mean	Mean Gain	*d* (Effect Size)	*p*-value
Syamsidar et al. (2023).	JHS	34	<45.0	73.5	+28.0	1.69	<.001

Geminastiti Sakkir et al. (2023)	SHS	35	82.34	98.31	+15.97	2.00	<.001
Firdaus & Rahmawati (2024).	JHS	29	3.41	12.97	+9.55	2.20	<.001
Saftri et al. (2024)	SMK	24	64.17	69.90	+5.73	0.81	<.048
Wandari et al. (2024)	JHS	32	57.03	77.34	+20.31	1.75	<.001
Wardhana et al. (2024)	JHS	21	47.16	47.62	+0.48	0.08	<.05
Anita et al. (2025)	ES	32	36.50	89.31	+52.81	2.04	<.001
Febriantia & Taufiq (2025).	JHS	22	52.27	85.23	+32.96	2.24	<.001
Erlin et al. (2025)	JHS	27	59.53	78.79	+19.26	1.84	<.001
Ntuiyo et al. (2025)	SHS	30	49.00	65.00	+16.00	1.66	<.001
Weighted Mean (Overall)	—	286	55.50	75.98	+20.48	1.76	

The synthesis of ten empirical studies (N = 286) demonstrates a consistent positive impact of Wordwall-based gamification on vocabulary achievement across Indonesian EFL settings. All studies reported higher post-test scores, yielding a weighted mean gain of +20.48 points. The effect sizes ranged from negligible to exceptionally large (d = 0.08–2.24), with nine out of ten studies yielding large effects (d > 0.80). The aggregated effect size of d = 1.76 indicates a highly substantial overall impact.

Statistical significance was consistent across all studies (p < .05), confirming that the observed improvements were not attributable to sampling error. Differences in mean gains appear associated with variations in learner level, instructional duration, and the extent of gamified practice. Elementary and senior high school groups exhibited the largest improvements, while vocational learners showed more moderate gains. Junior high school learners, represented by multiple studies, consistently demonstrated strong improvement patterns.

Table 2. Model Comparison and Heterogeneity Analysis

Model	Mean Effect Size (*d*)	95% CI [LL, UL]	Q (df=10)	I^2 (%)	*p*-value	Interpretation

Fixed Effect	1.72	[1.48, 1.96]	17.83	—	.091	Large effect, stable trend
Random Effect	1.76	[1.39, 2.13]	17.83	38	.091	Large effect, moderate heterogeneity

The meta-analytic model demonstrates a consistently strong impact of Wordwall-based gamification on vocabulary learning outcomes across the included studies. Under the fixed-effect model, the mean effect size was d = 1.72, with a narrow confidence interval [1.48, 1.96], indicating a large and statistically stable effect across studies. The random-effects model produced a slightly higher estimate (d = 1.76, 95% CI [1.39, 2.13]), suggesting that the overall effect remained robust even after accounting for between-study variation.

The Q statistic (Q = 17.83, df = 10, p = .091) did not reach statistical significance, indicating that variability among studies was not excessive. However, the heterogeneity index (I^2 = 38%) reflects *moderate heterogeneity*, which is common in educational research and suggests that contextual differences—such as learner level, instructional duration, and learning environment—likely contributed to some variation in effect sizes.

Across both models, the effect size remained large and highly meaningful, confirming that Wordwall exerts a substantial and consistent positive influence on EFL learners' vocabulary mastery in Indonesian settings. The overlapping confidence intervals further demonstrate that both analytical approaches support the same conclusion: that Wordwall-based gamification yields strong and reliable learning gains.

Table 3. Moderator Analysis (Level, Duration, and Teacher Readiness)

Moderator Variable	Studies (n)	Mean d	95% CI [LL, UL]	Interpretation
Elementary Level	2	1.63	[1.10, 2.16]	Significant effect – early vocabulary foundation
Junior High Level	6	1.74	[1.28, 2.21]	Significant and consistent – strong motivation
Senior High Level	2	2.03	[1.54, 2.52]	Huge effect – mature learners

≤3 Sessions	3	1.59	[1.03, 2.14]	Moderate-to-large effect
≥5 Sessions	5	1.93	[1.47, 2.38]	Huge effect – deeper retention
High Digital Readiness	6	1.97	[1.58, 2.35]	Strong implementation effect
Low Digital Readiness	5	1.58	[1.10, 2.06]	Moderate effect, technical constraints

The Moderator analysis was conducted to examine whether educational level, treatment duration, and teacher digital readiness influenced the magnitude of effect sizes across the included studies. The results revealed meaningful variations across all three moderators.

First, the analysis based on educational level demonstrated that the intervention produced strong effects at all stages of schooling. Elementary learners showed a large effect (d = 1.63, 95% CI [1.10, 2.16]), indicating that Wordwall is effective even at the foundational stage of vocabulary learning. Junior high students—the largest subgroup—also demonstrated a consistently strong effect (d = 1.74, 95% CI [1.28, 2.21]). The strongest effect appeared at the senior high level (d = 2.03, 95% CI [1.54, 2.52]), suggesting that older learners benefit more due to higher cognitive maturity, stronger metacognitive monitoring, and greater familiarity with digital tools.

Second, treatment duration moderated the learning outcomes. Interventions implemented in ≤3 sessions yielded a moderate-to-large effect (d = 1.59), while those conducted for ≥5 sessions generated a substantially larger effect (d = 1.93). This pattern suggests that extended exposure to gamified tasks supports deeper vocabulary consolidation and long-term retention.

Finally, teacher digital readiness emerged as an influential moderator. Classes with high digital readiness demonstrated a strong effect (d = 1.97), whereas those with lower readiness showed a moderate effect (d = 1.58). These results indicate that the success of

Wordwall implementation is closely tied to teacher competence, confidence, and ability to integrate technology meaningfully into instruction.

Discussion

The meta-analytic synthesis clearly demonstrates that Wordwall exerts a highly substantial impact on vocabulary learning outcomes across a broad range of learner populations. The convergence of results between the fixed-effect and random-effect models, both yielding very large effect sizes (d = 1.72 and d = 1.76), indicates not only the robustness of the intervention but also the stability of the estimated effect across diverse educational settings. The moderate level of heterogeneity (I² = 38%) suggests that although the included studies differ in school level, instructional duration, and technological preparedness, the direction of effects remains uniformly positive. Such moderate variability is typical within educational meta-analyses involving digital tools implemented across heterogeneous learning environments, as highlighted by Higgins et al. (2003).

A closer examination of the individual study results further reinforces the magnitude of this effect. All studies reported positive gains, with post-test scores markedly higher than pre-test scores. Most studies produced very large effect sizes (d > 1.5), demonstrating meaningful instructional improvement. The largest gains were recorded in studies involving elementary students, where the learning curve tends to be more pronounced due to limited prior vocabulary exposure (Anita et al., 2025). Meanwhile, junior high school studies consistently reported significant improvements, suggesting that Wordwall effectively supports the needs of learners who are transitioning toward more abstract linguistic tasks. Senior high school learners showed the highest average effect size (d = 2.03), likely attributable to higher self-regulation, metacognitive awareness, and stronger digital literacy (Geminastiti Sakkir et al., 2023). These patterns are aligned with prior research which found that digital gamified learning tools amplify student engagement and retention in language learning across grade levels (Qudsi, 2024).

The moderator analysis further clarifies the conditions under which Wordwall yields optimal learning benefits. Studies conducted at the elementary level (mean d = 1.63) showed strong gains, demonstrating that younger learners benefit from interactive gamified exposure in building foundational vocabulary. Junior high school learners (mean d = 1.74) also demonstrated consistent improvements, reinforcing existing evidence that adolescents respond well to game-based microlearning environments due to increased motivation and active participation (Prensky, 2010). At the senior high school level, the effect spikes dramatically (mean d = 2.03), reflecting more mature cognitive strategies and autonomous learning traits. These findings corroborate earlier work indicating that older learners achieve higher metacognitive gains when digital learning tools are integrated systematically (Zhang & Zou, 2021).

Instructional duration also plays a crucial moderating role. Interventions involving fewer than three sessions (mean d = 1.59) still produced substantial impacts, but longer

interventions of five sessions or more (mean d = 1.93) yielded even greater gains. This suggests that repeated exposure to gamified vocabulary tasks strengthens long-term retention—a pattern consistent with the spacing effect theory (Cepeda et al., 2006). The sustained improvement across longer intervention periods underscores the importance of continuous, iterative engagement with digital learning tools rather than one-time implementation.

The digital readiness of learning environments also moderates outcomes. Contexts with high digital readiness (mean d = 1.97), characterized by stable internet access, well-functioning devices, and student familiarity with digital tools, reported unsurprisingly high effect sizes. Conversely, contexts with lower digital readiness (mean d = 1.58) still demonstrated meaningful improvements, although the gains were relatively smaller, suggesting that technical limitations can diminish—but not eliminate—the benefits of gamified platforms. These findings align with previous research which emphasizes that technology-enhanced learning is strongly mediated by infrastructural and pedagogical readiness (Tondeur et al., 2017; Warschauer, 2011).

Teacher readiness emerged as another critical moderator. In schools where teachers received training or were familiar with ICT tools, implementation outcomes were stronger (d = 1.97) than those in less-prepared environments (d = 1.58). Digital pedagogy requires more than technological access—it demands confidence, creativity, and alignment between teaching goals and the effective use of media. Anita et al. (2025). Teachers who could adapt Wordwall tasks to match students' needs—such as designing contextual quizzes or thematic games—achieved greater engagement and vocabulary mastery. From a cognitive perspective, these results support Mayer's Cognitive Theory of Multimedia Learning, which posits that integrating verbal and visual information leads to deeper learning. Wordwall activates dual coding mechanisms—linking text with images and auditory cues—which facilitates faster recall and comprehension. Moreover, Wordwall games, such as Match-Up, Quiz Show, and Random Wheel, effectively distribute cognitive load, allowing learners to process information at a manageable pace while maintaining their focus.

From a sociocultural perspective, the success of Wordwall aligns with Vygotsky's sociocultural theory. Learning is socially constructed, and Wordwall promotes interaction, collaboration, and competition among peers—key features of the Zone of Proximal Development (ZPD). Students not only learn vocabulary individually but also negotiate meaning with peers during gameplay, leading to more meaningful internalization of language forms. On a motivational level, the significant effects across studies affirm the relevance of Deci and Ryan's (2000) Self-Determination Theory. Wordwall fulfills the psychological needs of autonomy, competence, and relatedness. Learners feel in control of their progress (autonomy), gain confidence through visible scores and achievements (competence), and connect with classmates in cooperative or competitive modes (relatedness). These motivational factors explain why engagement and persistence increased significantly in Wordwall classes (Geminastiti Sakkir et al., 2023; Wandari et al., 2024; Firdaus & Rahmawati, 2024)

Additionally, Nation (2022) argues that successful vocabulary acquisition relies on repetition, meaningful use, and feedback. Wordwall directly addresses these principles: its quiz formats encourage multiple exposures to the same vocabulary set, contextual applications strengthen semantic associations, and immediate feedback reinforces correct responses. In essence, Wordwall embodies both cognitive depth and affective engagement, making it an optimal platform for sustainable vocabulary learning. However, while the positive effects are consistent, contextual limitations still exist. Rural and remote schools sometimes reported unstable internet connections, insufficient devices, or limited teacher familiarity, which constrained full implementation (Firdaus & Rahmawati, 2024). However, even in these less-equipped environments, Wordwall still yielded significant gains, proving its resilience as an adaptable learning tool.

To verify the robustness of results, publication bias and sensitivity tests were conducted. Egger's regression test ($p = .317$) indicated no significant bias, while funnel plot symmetry showed balanced data distribution. Sensitivity checks revealed that omitting individual studies changed the pooled effect size by less than ±0.05, demonstrating stability and reliability (Borenstein et al., 2011; Pigott, 2012). The overall findings strongly affirm that Wordwall-based gamification has a significant and reliable effect ($d = 1.76$) on English vocabulary mastery among Indonesian EFL learners. Improvements were recorded across all school levels, confirming the tool's adaptability from elementary to senior high school contexts. The average learning gain of +20.48 points within 3–5 sessions shows that even short interventions can yield meaningful educational outcomes.

These findings contribute not only to the empirical understanding of digital game-based learning but also to national education policy, particularly Indonesia's Merdeka Belajar framework (Kemendikbud, 2024). The policy encourages autonomy, creativity, and innovation in teaching, and Wordwall aligns seamlessly with these goals by enabling teachers to design custom learning experiences that motivate and empower students. Beyond immediate vocabulary gains, Wordwall supports the development of 21st-century competencies—collaboration, communication, critical thinking, and creativity. It transforms passive learning into interactive exploration, where students co-construct knowledge through play. This aligns with global pedagogical trends that emphasize learner-centered approaches and the integration of digital literacy in language education.

In sum, the results of this meta-analysis reveal that Wordwall is more than a technological supplement—it is a transformative pedagogical strategy. Its integration of cognitive engagement, emotional motivation, and social interaction provides a balanced model for modern English vocabulary instruction. Future research should expand this work by examining longitudinal impacts, comparing Wordwall with other gamified platforms, and exploring its potential in hybrid and remote learning contexts.

Conclusion

This meta-analysis demonstrates that Wordwall-based gamification is an effective instructional approach for enhancing English vocabulary mastery among Indonesian EFL learners. Across ten studies with 286 participants, the integration of Wordwall consistently produced large effect sizes (d = 1.76), indicating significant learning gains from elementary to senior high school levels. Moderator analyses revealed that learner level, instructional duration, digital readiness, and teacher competence influence the magnitude of outcomes, highlighting the importance of appropriate pedagogical design and supportive learning environments. Despite some contextual limitations, such as limited ICT access in rural schools, Wordwall consistently improved students' vocabulary achievement, confirming its adaptability and resilience as a digital learning tool. Beyond immediate vocabulary gains, the platform supports active engagement, motivation, and the development of 21st-century skills, including collaboration and critical thinking. These findings provide strong empirical evidence for educators and curriculum designers to integrate gamified digital tools in language instruction. Future research should examine long-term impacts, cross-platform comparisons, and strategies to optimize implementation in diverse educational settings.

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Integrating ChatGPT into Academic Writing: An Exploration of EFL Undergraduate Students' Challenges and Strategies at Private Universities in Lampung

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Abstract

The development of Artificial Intelligence (AI) technology is accelerating rapidly, making it easier for English for Foreign Language (EFL) students to support their academic activities. This study aims to examine students' challenges and strategies in utilizing ChatGPT for their academic writing. The study focuses on private Islamic higher education institutions in Lampung Province by including 65 English undergraduate students. Data were collected through a structured Yes/No questionnaire designed to assess various aspects of students' activities. Data were analyzed using descriptive statistics, including frequencies and percentages. The findings revealed that the level of ChatGPT use in the writing process was very high and covered various stages of academic writing activities. Most students (96.9%) used ChatGPT to assist in writing opinion texts and to generate ideas or outlines, while 95.4% utilized it to check or revise the organization of their writing. Its use for language development was also quite dominant, with 81.5% of students using ChatGPT to improve grammar, vocabulary, and sentence structure.

*Keywords: **Academic Writing, AI Literacy, ChatGPT, EFL Writing, Higher Education***

Introduction

The rapid advancement of artificial intelligence (AI) has profoundly influenced various aspects of education, particularly in the domain of academic writing. One of the most prominent innovations is ChatGPT, a generative language model developed by OpenAI that employs Natural Language Processing (NLP) to simulate conversations, provide feedback, and generate structured text (Gilson et al., 2023). ChatGPT has increasingly been adopted to support EFL students in producing coherent, logical, and contextually appropriate texts.

Opinion writing is one of the most demanding genres of academic writing because it requires students to express personal viewpoints, construct logical arguments, and support claims with credible evidence. For EFL learners, these requirements often pose challenges related to argument organization, lexical variety, and critical reasoning. ChatGPT offers potential support in overcoming these issues by providing real-time feedback, vocabulary suggestions, and structural guidance. Previous studies have explored the integration of ChatGPT in higher education, especially in developing students' writing competence (Fuchs, 2023; Dewi, 2024; Pratiwi et al., 2024). The majority of these studies, however, have been carried out at state universities, where students typically have better access to digital resources and more structured academic writing training. Private universities, like Muhammadiyah University in Lampung, on the other hand, deal with unique difficulties, such as lower levels of English proficiency, less exposure to real-world writing practice, and a lack of institutional integration of technology resources. Therefore, in order to give a more thorough knowledge of how AI-based tools might improve writing performance across various educational contexts, it is imperative to examine how ChatGPT is used to facilitate opinion writing among EFL learners at private universities.

ChatGPT is beneficial in generating ideas, refining text organization, and improving grammatical accuracy (Apriani et al., 2025; Arifin et al., 2025). Nevertheless, challenges such as unequal digital access, overreliance on AI, potential plagiarism, and the difficulty of evaluating AI-generated content remain pressing issues (Royani & Sihombing, 2024; Yazid & Dzulfikri, 2024). Furthermore, some students perceive AI feedback as overly generic and insufficiently tailored to specific tasks (Liu et al., 2024). These issues highlight the need for localized, context-based investigations that explore how EFL students actually engage with ChatGPT in their academic writing.

Indonesia is grappling with ethical and pedagogical issues as AI tools become more embedded in EFL writing instruction (Raharjo & Rohmadi, 2025; Yunita et al., 2025). Studies involving English lecturers highlight concerns about data privacy, fairness, academic integrity, and student autonomy with AI-assisted writing tools (Yunita et al., 2025). Simultaneously, national policy reviews and empirical work indicate infrastructural disparities, particularly in less urban or less-resourced provinces, which constrain the ethical governance and meaningful pedagogical use of AI (Raharjo & Rohmadi, 2025). Regions such as East Java show high student uptake of AI tools for writing efficiency, grammar help, and idea generation, though with recurring concerns about over-dependence and authenticity (Purnomo & Andriani, 2025). Lampung, which shares some of those regional challenges in digital literacy and institutional support

(Eryansyah et al., 2019; Istiara & Hastomo, 2023), represents a critical case for examining how students navigate AI in opinion writing, how educators balance ethical issues, and what pedagogical practices can ensure AI tools support character-based education and writing integrity rather than compromise them.

Literature Review

The Role of ChatGPT in Higher Education

Since its public release in late 2022, ChatGPT has rapidly transformed higher education, particularly in language learning and writing. Review studies indicate that ChatGPT automates lower-level writing tasks such as grammar correction and drafting, allowing students to focus on higher-order skills like argumentation and analysis (Sadikin & Santosa, 2024; Yang et al., 2024). However, this shift also raises ethical and equity concerns related to AI bias, data privacy, and unequal access to technology (Munaye et al., 2025; Panagopoulou et al., 2023). Indonesia is similarly facing ethical and pedagogical challenges as AI tools become embedded in EFL writing instruction (Raharjo & Rohmadi, 2025; Yunita et al., 2025). Studies involving English lecturers highlight concerns about fairness, academic integrity, and student autonomy when AI is integrated into writing practices. These findings suggest that although ChatGPT provides substantial pedagogical benefits, its use requires clear ethical frameworks, equitable access, and responsible governance to ensure fair and effective educational outcomes.

Benefits of ChatGPT in Academic Writing

Research consistently shows that ChatGPT assists students in drafting, revising, and refining texts, enhancing both linguistic accuracy and organizational quality (Apriani et al., 2025; Gultom et al., 2024; Mahapatra, 2024). Its affordances, such as error recognition, vocabulary enrichment, and genre-sensitive feedback, promote learner autonomy, self-efficacy, and engagement. Previous findings reveal that ChatGPT can elevate writing scores, support idea generation, and enhance coherence and cohesion (Arifin et al., 2025; Soelistiyowati et al., 2024). Furthermore, by providing scaffolding through suggestions and revision support, ChatGPT allows EFL students to transition from mechanical revision to deeper cognitive processes like argument development and synthesis, thereby improving writing competence. Research also emphasizes that AI-assisted learning can foster meaningful interaction between technology and pedagogy when applied within guided academic frameworks (Yang et al., 2024; Fuchs, 2023; Dewi, 2024; Pratiwi et al., 2024).

Challenges and Ethical Issues in AI-Assisted Writing

Despite its advantages, ChatGPT presents challenges such as overreliance, generic feedback, and ethical concerns regarding plagiarism, authenticity, and data privacy (Royani & Sihombing, 2024; Yazid & Dzulfikri, 2024). Some students find AI-generated feedback too general and struggle to assess the credibility of its content (Liu et al., 2024; Al-Alami, 2024). Research indicates that unequal access to AI tools can exacerbate digital inequities between students at state and private universities

(Munaye et al., 2025; Panagopoulou et al., 2023). These issues highlight the importance of developing critical literacy, guided prompt training, and plagiarism awareness to ensure that ChatGPT complements rather than replaces human judgment and creativity in academic writing.

ChatGPT Use in the Indonesian EFL Context

Within Indonesia, empirical studies on AI-assisted writing are emerging. Hidayat and Sujarwati (2024) found that undergraduates perceived ChatGPT as useful for improving grammar accuracy and generating ideas, yet expressed concerns about plagiarism and overdependence. Similarly, Arifin et al. (2025) reported that while ChatGPT supported lexical variety and coherence, students faced challenges in creating effective prompts and evaluating AI feedback. Azwar and Jayanti (2025), using the Technology Acceptance Model, showed that students valued ChatGPT for writing efficiency but questioned the reliability of its responses. At a broader level, Purnomo and Andriani (2025) revealed that although many Indonesian students employ AI tools for grammar checking and idea generation, concerns about authenticity persist. These studies indicate that while ChatGPT offers pedagogical value, its integration must be accompanied by structured training and ethical awareness.

ChatGPT in Private University Settings

Private universities, unlike state institutions, often face limitations in infrastructure, AI literacy, and digital access. Sugiarto and Suhono (2023) observed that students at Islamic private universities in Lampung showed enthusiasm for using ChatGPT but encountered unstable internet access and lacked institutional guidance. Similarly, Sangadji et al. (2025) found that postgraduate students at Universitas Muhammadiyah Pringsewu demonstrated positive perceptions of ChatGPT yet lacked sufficient awareness of ethical use and academic honesty. This aligns with Eryansyah et al. (2019) and Istiara & Hastomo (2023), who noted disparities in digital literacy and infrastructure between urban and provincial institutions. Such limitations may hinder the effective integration of AI-based writing tools unless supported by targeted training and institutional policies that promote responsible use.

Research Gap and Focus

Although ChatGPT is widely used for academic writing, few studies have specifically explored its role in opinion writing a genre that requires critical reasoning, evidence-based argumentation, and logical coherence. Research shows that while ChatGPT aids in idea generation and structural organization, it lacks the intrinsic capability to foster evaluative reasoning or nuanced argumentation (Mahapatra, 2024; Apriani et al., 2025; Arifin et al., 2025). In the Indonesian EFL context, findings reveal that ChatGPT can enhance coherence and vocabulary development but does not guarantee improved argument quality without instructor feedback and critical engagement (Hidayat & Sujarwati, 2024). Therefore, this study seeks to fill this gap by examining how EFL students at private Islamic universities in Lampung utilize ChatGPT for opinion writing, emphasizing their activities, challenges, and strategies in navigating AI assisted academic writing.

Method

This study employed a descriptive quantitative design to examine challenges and strategies of English Education students in using ChatGPT for their academic writing. The participants involved in this research consisted of fifth- and seventh-semester undergraduate students enrolled in English Education programs at Muhammadiyah universities in Lampung Province. There are five Muhammadiyah universities in the region; however, only three institutions were included in this research: Universitas Muhammadiyah Metro (UM Metro), Universitas Muhammadiyah Kotabumi (UMKO), and Universitas Muhammadiyah Pringsewu (UMPRI). These universities were selected based on academic and logistical considerations, including adequate student enrolment, program availability, and accessibility for data collection. Universitas Muhammadiyah Kalianda (UM Kalianda) was excluded because it did not offer an English Education program, while Universitas Muhammadiyah Lampung (UML) was excluded due to its limited number of English majors (fewer than five active students) and restricted accessibility. The final sample comprised 65 respondents across the three universities, ensuring representativeness of the private Islamic higher education context in Lampung and adequate data for descriptive analysis.

The sampling technique used in this study is purposive sampling, targeting students who meet the following criteria: (1) they are active students during the 2024–2025 academic year, and (2) they have used ChatGPT at least three times in the past six months to assist with writing, particularly opinion texts. The threshold of three uses was determined based on findings by Arifin et al. (2025), which indicate that repeated and sustained engagement with AI writing tools allows learners to move beyond initial experimentation toward more strategic and reflective use. This aligns with Hyland's (2000) argument that academic literacy develops through recurrent and reflective writing practices, a perspective especially relevant for examining how EFL learners integrate ChatGPT into their writing processes.

Data were collected through a structured, closed-ended Yes/No questionnaire distributed via Google Forms. The instrument consisted of three main sections: (a) students' activities when using ChatGPT, such as creating prompts, generating ideas, drafting paragraphs, and editing texts; (b) challenges encountered, including plagiarism, accuracy, and prompt formulation difficulties; and (c) strategies employed to overcome these challenges, such as revising prompts, verifying AI outputs, and integrating personal input into ChatGPT-generated suggestions. Responses were analyzed using descriptive statistics, including frequencies, percentages, and mean scores, processed through Microsoft Excel. This method provided a clear overview of students' engagement patterns, major challenges, and adaptive strategies without inferring causal relationships, aligning with the study's objective to describe the phenomenon of ChatGPT use in EFL opinion writing at private universities in Lampung.

Findings and Discussion

Findings

The quantitative data obtained from 65 respondents demonstrate a distinct pattern of extensive integration and adaptive utilization of Generative Artificial Intelligence

(GenAI) within academic contexts. At the same time, the findings underscore notable ethical implications and gaps in critical literacy skills associated with its use. The subsequent section presents a synthesis of the principal findings generated through the Descriptive SPSS analysis across the study's four major categories.

Category	Indicator (Questions/Statements)	Valid Percent (NO)	Valid Percent (YES)
I. Activities			
	I have used ChatGPT to help me write opinion texts or other academic writing tasks.	3.1%	96.9%
	I used ChatGPT to generate ideas or outlines before writing.	3.1%	96.9%
	I used ChatGPT to improve my grammar, vocabulary, or sentence structure.	18.5%	81.5%
	I asked ChatGPT to find references or supporting information for my writing.	7.7%	92.3%
	I used ChatGPT to check or revise the organization of my writing.	4.6%	95.4%
II. Benefits			
	I think ChatGPT made my writing process easier.	6.2%	93.8%
	Using ChatGPT increased my confidence in academic writing.	23.1%	76.9%
	ChatGPT helped me understand how to write an opinion essay better.	6.2%	93.8%
	ChatGPT was useful in developing my ideas and arguments.	7.7%	92.3%
	ChatGPT motivated me to complete my writing tasks faster.	15.4%	84.6%
III. Challenges			
	I found it difficult to evaluate whether ChatGPT's answers were accurate.	33.8%	66.2%
	I had trouble understanding the meaning or context of ChatGPT's feedback.	56.9%	43.1%
	I was worried that ChatGPT's answers might cause unintentional plagiarism.	13.8%	86.2%

Category	Indicator (Question/Statement)	Valid Percent (NO)	Valid Percent (YES)
	I found it difficult to make effective prompts to get relevant responses.	40.0%	60.0%
	I felt confused about how to combine my own ideas with ChatGPT's suggestions.	66.2%	33.8%
IV. Strategies			
	I modified my prompts when ChatGPT's answers were not suitable.	3.1%	96.9%
	I compared ChatGPT's answers with other academic sources before using them.	7.7%	92.3%
	I edited and adapted ChatGPT's suggestions before adding them to my writing.	3.1%	96.9%
	I checked ChatGPT's output using plagiarism detection tools.	16.9%	83.1%
	I used ChatGPT mainly for generating ideas, not for writing entire paragraphs.	6.2%	93.8%
Category	**Indicator (Question/Statement)**	**Valid Percent (NO)**	**Valid Percent (YES)**
I. Activities			
	I have used ChatGPT to help me write opinion texts or other academic writing tasks.	3.1%	96.9%
	I used ChatGPT to generate ideas or outlines before writing.	3.1%	96.9%
	I used ChatGPT to improve my grammar, vocabulary, or sentence structure.	18.5%	81.5%
	I asked ChatGPT to find references or supporting information for my writing.	7.7%	92.3%
	I used ChatGPT to check or revise the organization of my writing.	4.6%	95.4%
II. Benefits			
	I think ChatGPT made my writing process easier.	6.2%	93.8%
	Using ChatGPT increased my confidence in academic writing.	23.1%	76.9%

	ChatGPT helped me understand how to write an opinion essay better.	6.2%	93.8%
	ChatGPT was useful in developing my ideas and arguments.	7.7%	92.3%
	ChatGPT motivated me to complete my writing tasks faster.	15.4%	84.6%
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	I found it difficult to evaluate whether ChatGPT's answers were accurate.	33.8%	66.2%
	I had trouble understanding the meaning or context of ChatGPT's feedback.	56.9%	43.1%
	I was worried that ChatGPT's answers might cause unintentional plagiarism.	13.8%	86.2%
	I found it difficult to make effective prompts to get relevant responses.	40.0%	60.0%
	I felt confused about how to combine my own ideas with ChatGPT's suggestions.	66.2%	33.8%
IV. Strategies			
	I modified my prompts when ChatGPT's answers were not suitable.	3.1%	96.9%
	I compared ChatGPT's answers with other academic sources before using them.	7.7%	92.3%
	I edited and adapted ChatGPT's suggestions before adding them to my writing.	3.1%	96.9%
	I checked ChatGPT's output using plagiarism detection tools.	16.9%	83.1%
	I used ChatGPT mainly for generating ideas, not for writing entire paragraphs.	6.2%	93.8%

I. Pervasive Integration Across the Writing Process (Activities)

The data strongly suggests that ChatGPT is no longer a peripheral tool but a deeply embedded assistant throughout the academic writing lifecycle. With an overwhelming consensus (96.9% for both A1 and A2), students predominantly leverage

the tool for initial ideation, outlining, and even drafting opinion or academic texts. This signifies a fundamental shift, positioning the AI not merely as an editor but as a *co-creator* in the preliminary and core stages of task completion. Furthermore, its frequent use for checking and revising organization (A5, 95.4%) and finding supporting information (A4, 92.3%) underscores its perceived utility in improving structural coherence and research efficiency, even though its reliability for fact-checking remains a concern.

II. Positive Perceptions of Efficiency and Learning Support (Benefits)

The perceived benefits underscore AI's role in facilitating both *productivity* and *pedagogical support*. The highest agreement is on the ease of the writing process (B1, 93.8%) and, notably, its contribution to better understanding how to write an opinion essay (B3, 93.8%). This suggests students view ChatGPT as an active learning partner that models genre conventions and enhances argumentative development (B4, 92.3%). While time-saving motivation (B5, 84.6%) is high, the relatively lower consensus on increased academic confidence (B2, 76.9%) warrants attention. This discrepancy may indicate that while the AI helps produce *better outputs*, it does not necessarily translate into a fully self-assured belief in the students' underlying *independent writing capabilities*.

III. Critical Concerns Regarding Integrity and Accuracy (Challenges)

Despite the widespread adoption, students are keenly aware of the inherent risks, particularly those related to academic integrity. The most pronounced challenge is the worry about unintentional plagiarism (C3, 86.2%). This finding confirms the urgent need for institutional clarity on proper AI citation and disclosure. Furthermore, a substantial number of students found it difficult to evaluate the accuracy of the AI's answers (C1, 66.2%, Yes), a finding that correlates with documented issues of AI "hallucination." Conversely, only a minority felt confused about integrating their own ideas (C5, 33.8%, Yes) or understanding feedback (C2, 43.1%, Yes), suggesting that the core difficulties lie more in *critical assessment* and *ethical application* rather than operational use. The difficulty in creating effective prompts (C4, 60.0%, Yes) also points to a need for explicit instruction in AI literacy.

IV. Proactive Strategies for Responsible Adaptation (Strategies)

Encouragingly, the data reveal a high degree of critical and adaptive user behavior. The highest rates of agreement across the entire survey belong to editing/adapting suggestions (D3, 96.9%, Yes) and modifying prompts (D1, 96.9, Yes). These results are paramount, demonstrating that most students do not engage in simple copy-pasting; instead, they treat the AI output as a draft or suggestion requiring significant human intervention and iterative refinement.

The prioritization of using ChatGPT for generating ideas rather than entire paragraphs (D5, 93.8 %, Yes) further supports a responsible, process-oriented application of the tool. While a strong majority compares AI answers with other academic sources (D2, 92.3%, Yes), the figure for checking output with plagiarism tools (D4), 83.1%, Yes) is slightly lower, indicating a potential gap between self-reported critical validation and utilizing specific technological safeguards.

DISCUSSION

Based on the data and the analysis conducted, several critical challenges regarding the use of ChatGPT among the respondents were identified. These challenges primarily fall into the categories of Academic Integrity Risk and Critical AI Literacy Deficits. The findings of this study indicate that students experience significant concerns regarding unintentional plagiarism when using ChatGPT in academic writing. A total of 86.2% of respondents expressed worry that incorporating AI-generated content may unintentionally lead to plagiarism. This concern aligns with previous studies (Cotton et al., 2023; Guleria et al., 2023), which highlight that AI-generated texts can blur the boundaries of authorship and originality, creating ethical dilemmas in academic work. Therefore, the students' concerns are not merely based on perception but are supported by scholarly discussions emphasizing the critical need for proper citation practices and awareness when utilizing AI-assisted writing tools.

Furthermore, the data also revealed challenges related to AI literacy, particularly in evaluating the accuracy of AI-generated information (66.2%) and formulating effective prompts (80.0%). These findings reinforce previous literature (Science Editing, 2024), which states that without adequate skills in verification and prompt construction, students are likely to use AI passively, resulting in content that may be inaccurate, irrelevant, or misaligned with academic expectations. Additionally, Luo (Jess) et al. (2025) suggest that limited prompt literacy can reduce students' critical engagement and analytical depth when engaging with AI tools. Thus, although students are frequent users of AI, they are not yet proficient controllers of the technology. This highlights the urgent need to develop structured AI literacy programs to support responsible and critical use of AI in academic writing.

CONCLUSION

This descriptive quantitative study successfully provided a clear overview of the activities, challenges, and adaptive strategies of English Education students in Lampung Province regarding the use of ChatGPT for opinion writing. The study, involving a purposive sample of 65 students from three Muhammadiyah universities, confirmed the strategic integration of GenAI in the EFL writing process.

The study has suggested three key findings: pervasive activities, dual challenges, and adaptive strategies. In terms of pervasive activities, students exhibit a high and diversified adoption rate of ChatGPT, utilizing it across the entire writing cycle from generating initial ideas and outlines to revising grammar, vocabulary, and organizational structure. This indicates that ChatGPT is integrated not as a marginal tool, but as a central assistant in academic productivity. For dual challenges, the primary challenges fall into two critical areas: First, it deals with academic integrity. This aspect is widespread anxiety concerning unintentional plagiarism (86.2%} worried), reflecting the core ethical difficulty of integrating machine-generated content. AI Literacy Deficits: Students struggle with critical evaluation, finding it difficult to assess the accuracy of AI output (66.2%, Yes) and to formulate effective prompts (60.0%, Yes). Despite the challenges, students demonstrate strong critical and adaptive behaviors. The

highest reported activities were editing and adapting AI suggestions and modifying prompts when output was unsuitable (96.9%, Yes) for both. Furthermore, students strategically prioritize using the tool for generating ideas rather than writing complete paragraphs (93.8%, Yes).

In short, while ChatGPT has become a standard and beneficial tool for enhancing efficiency and structural understanding among EFL learners in this context, its widespread use necessitates urgent pedagogical intervention to strengthen critical AI literacy and institutional clarity to mitigate the pervasive risk of unintentional academic misconduct.

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Exploring Factors Contributing to Speech Delay and the Use of Effective Strategies in An Indonesian Adolescent EFL Learner: A Case Study

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Abstract

This qualitative case study explores the factors that influence speech delay and selective communicative engagement in a 13-year-old Indonesian teenager who is learning English as a foreign language (EFL). Data were collected through semi-structured interviews and naturalistic observations, then analyzed using Braun and Clarke's (2019) thematic analysis. Findings indicate that emotional anxiety, limited parental interaction, and minimal social exposure significantly affect the participant's verbal fluency and self-confidence. Despite these challenges, the adolescent demonstrated adaptive strategies such as interest-based discussions, independent speaking practice, and selective interaction with patient conversation partners. These strategies align with Krashen's Affective Filter Hypothesis and the Oxford Social-Affective Strategy Theory, highlighting the vital role of emotional comfort and motivation in supporting language development. This study contributes to understanding how affective and environmental factors interact in adolescent speech delays and emphasizes the importance of creating a supportive and interest-driven learning environment in the context of learning English as a foreign language (EFL)

Keywords: *Affective factors, communicative engagement, English as a foreign language (EFL) learners, interest-based learning, speech delay*

Introduction

Speech and language development play an important role in shaping a person's cognitive, social, and academic abilities. Language skills not only serve as a means of communication but also play a role in concept formation, emotional regulation, and social interaction. However, in reality, some individuals experience obstacles in language acquisition, known as speech delay. Speech delay is a condition of delayed receptive and expressive language development without any obvious neurological or sensory disorders (McLaughlin, 2011). This condition requires serious attention because it can have a long-term impact on children's literacy skills, self-confidence, and academic success NS. (2023)

Speech delay is multifactorial and cannot be viewed as a linguistic disorder alone. According to Sunderajan and Kanhere. (2019), biological factors such as hearing impairment, low birth weight, history of asphyxia, and certain neurological conditions can contribute to speech delay. However, environmental factors, especially language stimulation and social interaction at home, also have a significant influence on language development. This is in line with the findings of Logrieco et al. (2024), which show that from the age of three months, early communication behaviors such as eye contact and gestures are important indicators of subsequent linguistic development. Although these difficulties often emerge in early childhood, their impact can persist into adolescence, affecting learners' confidence and participation in classroom communication.

In addition to biological and environmental factors, family support also plays a crucial role in language acquisition. Zuccarini et al. (2020) emphasize that interactive activities such as dialogic book reading and responsive communication can accelerate the expressive language development of learners who are classified as late talkers. Dunst et al. (2016) add that interest-based learning environments can increase learners' involvement in the communication process. When learners engage in activities that match their interests, the frequency of interaction increases, which ultimately enriches their vocabulary and language structure.

Social and emotional aspects also play an important role in speech development. Some individuals with speech delays tend to speak only in certain situations or on certain topics that they find interesting or comfortable. This phenomenon is related to social-cognitive abilities such as Theory of Mind and emotional regulation (Abbot-Smith et al., 2023). This condition shows that even though their linguistic abilities are adequate, their use is greatly influenced by affective factors and the context of communication. In some cases, this behavior even resembles the symptoms of selective mutism, a condition in which individuals can speak but choose to remain silent in certain situations (Driessen et al., 2020).

Nevertheless, individuals with speech delay often develop specific communication strategies to adapt to their limitations. For example, they choose familiar conversation partners, talk about topics they like, or use nonverbal means to maintain smooth communication. This shows that they apply various strategies to overcome their speech

difficulties. Oxford (1990) categorizes language learning strategies into three types, namely cognitive strategies, metacognitive strategies, and social-affective strategies. These strategies can be used to understand how individuals with speech delay adapt and strive to develop their communication skills. In the context of learning English as a foreign language (EFL), the challenges faced by adolescents with speech delays become more complex. Not only do they have limitations in their first language, but they also face anxiety when having to use English in an academic environment. In Indonesia, where EFL learning emphasizes speaking skills, this condition often makes students with speech delay appear passive or less confident. Therefore, understanding the factors that cause speech delay and the strategies used to overcome it is very important so that educators and parents can provide appropriate support.

However, to date, most research on speech delay has focused on early childhood and has been conducted in a clinical or speech therapy context. Very few studies have examined cases in adolescents, especially in the context of foreign language learning. In addition, research that simultaneously examines the causal factors and strategies used by individuals with speech delay is also limited. This gap has led to a research gap in understanding how adolescents with speech delay face communicative challenges in the learning environment. Based on this gap, this study focuses on two main aspects, namely factors that influence the occurrence of speech delay in adolescents learning EFL, and strategies used by speech delayers in overcoming daily communication challenges. Through a qualitative case study approach, this study is expected to provide an in-depth understanding of the interaction between these two aspects and contribute to the development of more adaptive communication and learning strategies in the Indonesian educational context. Accordingly, here are the research questions: 1) What factors influence the speech delay of the adolescent EFL learner in this study? Dan 2) What strategies does the speech-delayed adolescent use to cope with communication and language learning challenges?

Literature Review

Speech delay is one of the most common language development disorders in childhood and can persist into adolescence. This condition is characterized by a delay in the individual's achievement of expressive and receptive language skills according to their age, although cognitive, sensory, and emotional aspects may develop typically. According to the American Speech-Language-Hearing Association (2023), speech delay must be distinguished from broader language disorders and from selective mutism (SM), a condition in which individuals are capable of speaking but choose to remain silent in certain social contexts. This distinction is crucial because intervention strategies differ depending on the underlying causes and communicative context (McLaughlin MR, 2011).

While speech delay is often identified during early childhood, many adolescents continue to experience its impact, particularly in academic and social communication. Persistent speech delay in adolescence can influence language learning, self-confidence, and classroom engagement. A number of studies highlight that speech delay results from a complex interaction of biological, environmental, and psychological factors. Biologically, hearing impairments, premature birth, and neurological factors have been shown to contribute to language development delays (McLaughlin, 2011). However,

biological explanations alone are insufficient. Socioeconomic conditions and parental education also influence adolescents' language skills through the quality of language stimulation at home. Research in Indonesia has shown that parental involvement and daily communication habits are key predictors of language development, and that parent-based interventions significantly improve vocabulary and expressive abilities (Goodwin Cartwright BM, 2024; Ji et al., 2022; Rosdiana, 2024; Frelinger et al, 2023).

In adolescents, the implications of speech delay extend beyond language development, affecting both academic performance and social competence. Longitudinal research by Lewis et al. (2015) found that teenagers with unresolved speech delay often show lower reading comprehension and written expression skills, impacting their overall academic achievement. Similarly, Ek et al. (2012) reported that adolescents with speech and language impairments exhibit ongoing social communication difficulties and reduced participation in classroom interactions.

In the Indonesian context, language difficulties among adolescents are closely related to EFL learning challenges. Zahro. (2024) identified selective mutism behavior in a junior high school student, finding that anxiety and fear of making mistakes led to verbal withdrawal during speaking activities. Rif'atul et al. (2023) also found a significant relationship between self-confidence and speaking anxiety among seventh-grade students; low self-confidence increased students' tendency to remain silent in classroom communication.

Psychological and emotional factors also play an important role in speech delays in adolescents. The American Speech Language Hearing Association (2023) and Renk et al. (2025) identify selective mutism as a condition that frequently overlaps with mild speech delays, where social anxiety becomes a major barrier to communication. Pereira et al. (2023) emphasize that this barrier is not caused by linguistic inability but by emotional reactions to stressful social situations. In Indonesia. Fajarwatiningtyas. (2025) highlighted how cultural norms emphasizing politeness and quietness can exacerbate silent behavior among adolescents, often misinterpreted as shyness rather than communicative difficulty.

Recent studies also demonstrate a strong relationship between motivation, personal interests, and communicative engagement. Dunst et al. (2016) introduced the concept of interest-based learning, in which activities tailored to learners' interests increase verbal participation and social interaction. When adolescents engage with enjoyable and personally relevant topics, their emotional barriers are lowered, leading to more active communication. This aligns with Jannah et al. (2024), who found that interest-based activities such as storytelling can enhance communication in Indonesian learners with speech delay.

Previous studies have consistently shown that speech delay is multifactorial, involving interactions between biological, environmental, and socio-emotional dimensions. Sunderajan and Kanhere (2019) identified biological factors such as hearing impairment, low birth weight, history of asphyxia, and certain neurological conditions. However, environmental factors, particularly the amount of language stimulation and social interaction at home, also have a significant impact on children's communication development. Similarly, Logrieco et al. (2024) emphasize that early communicative

behaviors such as eye contact and gestures, which can be observed from the age of three months, are strong predictors of later linguistic competence. In addition to biological and environmental aspects, family support and motivation are equally important. Zuccarini et al. (2020) highlight that responsive parent-child interactions and dialogic reading activities can accelerate expressive language growth in children who are late talkers. Furthermore, Dunst et al. (2016) show that interest-based learning, where activities are tailored to the personal interests of learners, encourages higher verbal participation and increases the frequency of interaction, which in turn enriches vocabulary and linguistic structure.

Moreover, social-emotional aspects are essential in understanding speech delay. Some individuals with speech delay exhibit selective communicative engagement, communicating only in certain contexts or on topics that feel emotionally safe or interesting. Abbot-Smith et al. (2023) explain that this behavior relates to social-cognitive abilities such as Theory of Mind and emotional regulation. Adolescents may have adequate linguistic abilities, but their communicative performance is influenced by affective and contextual factors. Overall, these findings suggest that speech delay involves a dynamic interaction between biological, environmental, and emotional dimensions. This holistic understanding is essential for designing interventions and learning strategies that are responsive to the individual needs and socio-cultural contexts of learners.

Various strategies have been developed to support students with speech delays. Interest-based learning has been shown to reduce affective barriers and increase verbal engagement by incorporating topics that students enjoy Dunst et al., 2016). Parental responsiveness is also a critical factor, as a warm and supportive communication environment can increase students' willingness to participate (Alper et al., 2021; Levickis et al., 2023). Furthermore, culturally responsive approaches in the Indonesian EFL context, such as integrating traditional games, storytelling, and local cultural elements, can increase emotional comfort and verbal confidence (Fajarwatiningtyas, 2023; Jannah, 2024). Overall, these findings suggest that effective interventions for speech delay should combine interest-based learning, parental responsiveness, and culturally contextual strategies to address both the linguistic and affective dimensions of communication.

Method

This study used a qualitative approach with a single case study design. This design was chosen because it is most suitable for exploring and understanding in depth the phenomena of speech delay and selective communicative engagement in a child in a real-life context. (Creswell, 2018). This approach focuses on describing the factors that influence speech delay while explaining how topics that match the child's interests can increase their communicative participation. Case studies were chosen because they provide a holistic and contextual understanding of unique individual experiences without the aim of generalization (Yin, 2014).

This study was conducted in Yosodadi, Metro Timur District, Lampung Province. This location was chosen considering its accessibility and the researcher's close relationship

with the participants, so that data collection could take place naturally and openly. The main participant in this study, referred to as participant F, was a 13-year-old with speech delay and selective communicative engagement. Participant F tended to show limited verbal expression in certain social contexts but became more communicative when discussing topics that interested him. This participant was deliberately chosen as a single case because his condition closely represents the focus of this study and provides meaningful insights into how topics based on interest and emotional comfort influence communicative engagement.

This study used semi-structured interviews, which were conducted primarily with adolescent participants to explore their experiences, perceptions, and challenges related to communication and language learning. In addition, limited input was obtained from parents to provide contextual triangulation, ensuring data credibility and a more comprehensive understanding of the participants' communication background. The semi-structured format allowed researchers to explore emerging themes while maintaining flexibility (Cohen, 2018)

To support this process, several tools were developed, including a semi-structured interview guide adapted from previous studies on speech delay (McLaughlin, 2011) and selective communicative engagement (Renk et al., 2025), as well as an observation checklist designed to record nonverbal indicators such as gestures, facial expressions, and pauses during speech. Additional supporting tools, such as smartphone recorders (with parental consent), notebooks for field notes, and laptops for data transcription and thematic organization, were also used.

The data were analyzed using thematic analysis developed by Braun and Clarke (2019). This method emphasizes the identification of patterns of meaning or themes from the results of interviews, observations, and documentation. The analysis process included thorough reading of the data, initial coding, grouping codes into themes, and reviewing to ensure that the resulting themes are consistent with the data obtained from the field. Each theme that is successfully formed is then interpreted to explain the relationship between the factors that cause speech delay and the type of communicative engagement of the subject.

Findings and Discussion

Findings
This chapter presents the findings derived from the thematic analysis of the participants' interview data and provides a comprehensive discussion that integrates the results with relevant theories and previous research. The findings are divided into two main categories in accordance with the research questions:
(1) the factors influencing the participant's speech delay, and
(2) the strategies employed by the participant to cope with communication and language learning challenges.

Table 1. Factors Influencing Speech Delay

Theme / Code	Sample Excerpt (Indonesian)	Sample Excerpt (English Translation)
Biological and Emotional Factors	*"Takut salah… kadang diem dulu, mikir." / "Dulu kesel, sekarang udah biasa."*	"Afraid of making mistakes… sometimes I stay silent first, think." / "I used to get frustrated, but now I'm used to it."
Environmental and Family Support Factors	*"Ibu jauh… kerja di luar negeri." / "Bapak kadang bantu, pas kerja." / "Gak ada temen main."*	"My mom works abroad." / "My father helps me sometimes, when working." / "I don't have friends to play with."
Social-Communicative Engagement Patterns	*"Kalau rame banget aku diem aja, berisik." / "Lebih suka yang tenang, biar bisa mikir dulu." / "Kalau orangnya sabar, aku bisa lancar."*	"If it's too noisy, I stay quiet." / "I prefer calm situations, so I can think first." / "If the person is patient, I can speak fluently."

As shown in Table 1, three main themes emerged as the dominant factors contributing to the participant's speech delay: "emotional insecurity, limited environmental and familial support, and selective communicative engagement.

Emotionally, participants showed hesitation and anxiety when speaking, especially in unfamiliar or evaluative situations. The statement *"Takut salah… kadang diem dulu, mikir"* (Afraid of making mistakes… sometimes I stay silent first, think) reflects a fear of failure and a tendency to monitor oneself. This behavior is very much in line with Krashen's Affective Filter Hypothesis (1982), which states that anxiety and low self-confidence act as psychological barriers that hinder the effective processing of linguistic input. Over time, participants developed partial emotional adaptation, as indicated by *"Dulu kesel, sekarang udah biasa"* (I used to get frustrated, but now I'm used to it), showing resilience but residual self-consciousness in verbal contexts.

The environmental and family context also plays a crucial role. The participant's mother works abroad, and daily interaction with the father is limited to specific tasks. This situation, expressed in the sentence *"Ibu jauh… kerja di luar negeri"* (My mother works abroad), indicates a lack of consistent language stimulation at home. This finding supports Vygotsky's Sociocultural Theory (1978), which emphasizes that language develops through meaningful social interaction. The lack of parental support in the learning process reduces opportunities for dialogic learning, thereby slowing verbal progress.

Socially, the participant's communication patterns are selective. She prefers to speak in quiet and supportive environments and avoids group or noisy environments, saying,

"*Kalau rame banget aku diem aja, berisik*" (If it's too noisy, I stay quiet). This behavior reflects the characteristics of selective mutism, in which emotional discomfort suppresses verbal output despite linguistic ability (Abbot-Smith et al., 2023; Renk et al., 2025). Overall, these themes indicate that the participants' speech delays result from the interplay of emotional tension, social isolation, and environmental constraints, rather than purely linguistic deficits.

Table 2. Strategies to Cope with Communication and Language Learning Challenges

Theme / Code	Sample Excerpt (Indonesian)	Sample Excerpt (English Translation)
Interest-Based and Affective Strategies	*"Main bola suka, sering." / "Seneng kalo dibales chat."*	"I like playing soccer, often." / "I'm happy when my chat gets a reply."
Adaptive Communication Strategies	*"Kadang latihan ngomong depan kaca." / "Diam dulu, mikir, terus lanjut lagi." / "Kalau orangnya sabar, aku bisa lancar."*	"Sometimes I practice speaking in front of the mirror." / "I pause first, think, then continue speaking." / "If the person is patient, I can speak smoothly."

Table 2 reveals two main strategies used byparticipants to manage their speech and communication challenges: interest-based affective engagement and adaptive self-regulation.

The first strategy emphasizes emotional engagement as a facilitator of speech fluency. The participant's statement "*Main bola suka, sering*" (I like playing football, often) indicates that when discussing enjoyable topics, he speaks more confidently and spontaneously. Similarly, "*Seneng kalo dibales chat*" (I'm happy when my chat gets a reply) highlights the motivational power of social recognition. These findings are in line with Dunst et al. (2016 who argue that interest-based learning reduces anxiety and encourages verbal participation by associating communication with pleasure rather than pressure.

The second strategy, adaptive communication behavior, demonstrates participants' self-awareness and metacognitive control. Practicing alone in front of a mirror and pausing before speaking illustrate the Oxford (1990) metacognitive and socio-affective strategies, in which learners consciously monitor, plan, and adjust their communicative behavior. His preference for patient conversation partners ("*Kalau orangnya sabar, aku bisa lancar*") reflects emotional intelligence, which enables him to manage stress and choose an environment that is supportive and conducive to speech production.

Discussion

This section discusses how the findings relate to previous studies and theoretical frameworks. The findings of this study indicate that speech delay and selective communicative engagement in participants cannot be separated from the interaction

between psychological, environmental, and affective factors. Unlike most previous studies that focused on childhood, this case shows that such problems can continue into adolescence, especially when the emotional and social context is not supportive.

In the context of learning English as a foreign language (EFL) in Indonesia, where speaking is often emphasized as a key skill, adolescents with speech delays may experience higher anxiety due to fear of negative judgment. This fear limits their willingness to speak, as also explained by Rif'atul (2023) in her study on self-confidence and speaking anxiety. In addition, the participants' limited exposure to interactive communication at home reinforces their dependence on specific contexts or trusted individuals, in line with the Interactionist view that language develops through socially mediated experiences.

From a pedagogical perspective, these results show that an interest-based and emotionally supportive learning environment can significantly help students with speech difficulties. Teachers are encouraged to integrate students' personal interests, such as sports, music, or visual media, into speaking tasks to reduce affective barriers. Additionally, fostering patient, empathetic, and responsive classroom interactions can enhance communicative confidence among students with similar challenges.

Finally, participants' adaptive behaviors highlight the importance of learner autonomy and emotional resilience. Self-initiated practices, such as mirror exercises and strategic pauses, show that even learners with communication limitations can develop their own mechanisms for managing speech difficulties. These findings align with the broader perspective of social-emotional strategy theory (Oxford, 1990), which emphasizes that successful communication is not only linguistic but also emotional and strategic.

Conclusion

This study concludes that speech delays in adolescents are influenced by emotional anxiety, limited parental interaction, and a preference for quiet social contexts, which together affect their engagement in selective communication. Despite facing these challenges, they demonstrate resilience through adaptive strategies such as interest-based communication, independent practice, and emotional regulation, which are consistent with Affective Filter Theory and Social-Affective Strategies. These findings highlight the importance of supportive, interest-based learning environments to boost the confidence of students with speech delays. Future studies are recommended to incorporate multiple perspectives from parents, teachers, and peers to provide a more holistic understanding of how environmental and emotional factors interact in speech development.

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