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DEVELOPING INNER SPEECH FOR ARABIC FLUENCY: EVIDENCE FROM THE ISLAMIC EDUCATION INSTITUTION IN MALAYSIA

Masnun [a,*], Nur Hanifansyah [b], Menik Mahmudah [c], Nur Aina Faqihah [d]

[a, b] Department of Arabic Education, Faculty of Education, Universitas Islam Internasional Darullughah Wadda'wah, Pasuruan, Indonesia
[c] Department of Arabic Education, Faculty of Education, Institut Agama Islam Al-Yasini Pasuruan, Pasuruan, Indonesia
[d] Foundation in Arabic Language Program, International Islamic University Malaysia, Pahang, Malaysia

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***Corresponding Author:**
Name:
Masnun
Email:
masnun@uiidalwa.ac.id

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Abstract

Background: Arabic-speaking fluency remains a central yet challenging goal in Malaysian Islamic education, where Arabic functions as both a religious and academic language. Although students receive formal instruction in grammar, vocabulary, and reading, many still rely on mental translation before speaking, limiting spontaneity and confidence. Inner speech, which is understood as silent Arabic self-talk, subvocal rehearsal, and internal sentence formulation, offers a cognitive pathway for strengthening oral fluency. **Research Objectives:** This study examines the extent to which students in Islamic educational institutions in Malaysia develop inner speech in Arabic and investigates how it contributes to speaking fluency, confidence, and self-regulation. **Methodology:** A mixed-methods design involving 60 final-year secondary and diploma-level students from two Islamic education institutions in Kedah, Malaysia, was employed. Data were collected through questionnaires, semi-structured interviews with 15 participants, classroom observations, and institutional documents. Quantitative data were analyzed using descriptive statistics, chi-square testing, Pearson correlation, and partial correlation, whereas qualitative data were examined through thematic analysis and triangulation. **Results:** The findings show that 68.3% of students regularly used Arabic inner speech. Advanced learners demonstrated stronger direct Arabic formulation, whereas beginners remained dependent on Malay-to-Arabic mental translation. A significant relationship was found between the proficiency level and the inner speech pattern, $\chi^2(2)=15.34$, $p<0.001$, Cramer's $V=0.51$. Arabic inner speech was also moderately correlated with perceived speaking fluency, $r=0.58$, $p<0.001$. **Unique Contribution:** This study extends inner speech theory to Arabic language acquisition in Islamic educational contexts and introduces inner Arabic thought as a measurable psycholinguistic factor in fluency development. **Conclusion:** By supporting rehearsal, vocabulary retrieval, self-correction, confidence building, and emotional regulation, inner speech functions as a cognitive bridge between linguistic knowledge and spontaneous Arabic speaking. **Recommendations:** Digital-based inner speech training through AI voice assistants, speech-recognition tools, or mobile Arabic self-talk diaries should be explored in future studies to strengthen internal rehearsal, reduce mental translation, and improve spontaneous Arabic fluency.

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Keywords: Inner speech; Arabic speaking fluency; Islamic education; Cognitive regulation.

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Introduction

The mastery of Arabic speaking skills remains a fundamental yet challenging goal in Islamic education, particularly within Malaysian institutions where Arabic is both a religious and academic language.[1] Althoug curricula emphasize grammar, vocabulary, and reading comprehension, many learners still struggle to produce spontaneous, fluent, and confident spoken Arabic.[2] The role of inner speech, the internal cognitive rehearsal and subvocalization that supports language planning, fluency, and self-regulation, is a key factor often neglected in traditional pedagogy.[3] Inner speech develops organically in naturalistic language environments; however, in non-Arabic speaking contexts, it requires intentional pedagogical support.

Islamic educational institutions continue to flourish in Malaysia, attracting both local and international students from neighboring countries seeking Islamic knowledge.[4] These institutions operate in diverse forms, including formal Islamic schools, religious colleges, tahfiz centres, and informal home-based learning systems.[5] They coexist alongside mainstream national education structures, offering varied curricula and Islamic scholarship-based pedagogical models.[6] In Malaysia, Islamic education explicitly embeds Arabic within its core curriculum, alongside Qur'anic studies, Hadith, Sirah, Ibadah, Adab, and Jawi.[7] This policy emphasis affirms Arabic as both a religious and academic language, which is central to the intellectual and spiritual formation of students. The Malaysian government recognizes Islamic education as an essential pillar of national development, moral formation and social

[1] Nur Hanifansyah et al., "Religious Drama Controversy: The Impact of Bidaah on Islamic Pedagogy and Media Literacy," *MIQOT: Jurnal Ilmu-Ilmu Keislaman* 49, no. 2 (2025): 314, https://doi.org/10.30821/miqot.v49i2.1407; Kamarulzaman Abdul Ghani et al., "Linguistic Features Differences in Arabic Textbooks Used at Islamic Schools in Malaysia," *KEMANUSIAAN The Asian Journal of Humanities* 28, no. 1 (2021): 151–69, https://doi.org/10.21315/kajh2021.28.1.7.

[2] Uraidah Abdul Wahab et al., "Saiz Kosa Kata Dan Pengetahuan Kolokasi Bahasa Arab Dalam Kalangan Pelajar Sijil Tinggi Agama Malaysia (STAM)," *Issues in Language Studies* 10, no. 1 (2021): 183–202, https://doi.org/10.33736/ils.2794.2021; Muhamad Solehudin et al., "The Psycholinguistic Effects of Blackboards and Colorful Chalk on Arabic Vocabulary Acquisition in Malaysian," *Izdihar : Journal of Arabic Language Teaching, Linguistics, and Literature* 8, no. 2 (2025), https://doi.org/10.22219/jiz.v8i2.36624.

[3] Aleksandr Fadeev et al., "Observing Inner Speech in Meaning-Making Through Visual Artistic Texts," in *Feeling, Skill and Knowledge: Semiotics of the Subject in Environment, Culture and World*, vol. 32, ed. Juha Ojala et al., Numanities - Arts and Humanities in Progress (Springer Nature Switzerland, 2025), https://doi.org/10.1007/978-3-031-95999-8_18.

[4] Masnun Masnun et al., "Senior Teaches Junior (STJ) Approach in Enhancing Arabic Vocabulary through Kitab Af'al: A Case Study in Malaysia," *Arabi : Journal of Arabic Studies* 9, no. 2 (2024), https://journal.imla.or.id/index.php/arabi/article/view/851.

[5] Masnun Masnun et al., "The Effectiveness of The Mukhayyam Al-'Arabī Program in Improving Students' Speaking Skills in Malaysia," *ALSUNIYAT: Jurnal Penelitian Bahasa, Sastra, Dan Budaya Arab* 8, no. 1 (2025): 55–70, https://doi.org/10.17509/alsuniyat.v8i1.74881.

[6] Adham Hasif Bin Najmuddin and Masnun Masnun, "What Is the Arabic Verb For…?: Guessing-Based Learning and Verb Retention among Malaysian Learners," *Kalamuna: Jurnal Pendidikan Bahasa Arab Dan Kebahasaaraban* 7, no. 1 (2026): 107–26, https://doi.org/10.52593/klm.07.1.08.

[7] Asyraf Isyraqi Bin Jamil et al., "From Integrated to Standard: Reformation of the Islamic Religious Education Curriculum and Teacher Training in Malaysia," in *Global Agendas and Education Reforms*, ed. Birol Akgün and Yusuf Alpaydın, Maarif Global Education Series (Springer Nature Singapore, 2024), https://doi.org/10.1007/978-981-97-3068-1_9.

cohesion, and supports it through multiple ministries and educational bodies.[8] Within this ecosystem, Arabic functions not only as a religious language but also as an academic medium, particularly in institutions with strong immersion policies. This context positions Malaysia as a significant environment for examining the cognitive dimensions of Arabic acquisition, including the development of inner speech as a pathway to linguistic internalization and communicative fluency.

Inner speech is increasingly recognized as a key cognitive mechanism in language development and executive functioning.[9] Kompa argues that thinking can be mediated through silent internal speech, indicating that language internalization plays a crucial role in reasoning.[10] Latinjak et al. synthesized decades of self-talk research and distinguished spontaneous and goal-directed self-talk with implications for learning and emotional regulation.[11] Hidayat et al.'s empirical findings show that structured self-talk interventions significantly enhance performance and confidence, demonstrating intentional internal verbalization's pedagogical potential.[12] Fernyhough and Borghi further established inner speech as a cognitive tool that supports attention, memory, and mental organization.[13] Modern neuro-engineering research has even shown that EEG activity can decode imagined speech confirming that inner speech is a measurable cognitive event rather than merely an introspective experience.[14]

Scholars have increasingly emphasized that internal verbalization plays a fundamental role in mental regulation, planning, and executive functioning.[15] Langland-Hassan noted that inner language supports cognitive monitoring and self-

[8] Mohd. Shuhaimi Bin Haji Ishak and Osman Chuah Abdullah, "Islamic Education in Malaysia: A Study of History and Development," *Religious Education* 108, no. 3 (2013): 298–311, https://doi.org/10.1080/00344087.2013.783362; Michael D. Barr and Anantha Raman Govindasamy, "The Islamisation of Malaysia: Religious Nationalism in the Service of Ethnonationalism," *Australian Journal of International Affairs* 64, no. 3 (2010): 293–311, https://doi.org/10.1080/10357711003736469; Nur Hanifansyah and Menik Mahmudah, "Enhancing Arabic Vocabulary Mastery Through Communicative Strategies: Evidence from Malaysia," *Al-Ta'rib : Jurnal Ilmiah Program Studi Pendidikan Bahasa Arab IAIN Palangka Raya* 12, no. 2 (2024): 263–78, https://doi.org/10.23971/altarib.v12i2.9082.

[9] Krista Tomson, "The Role of Inner Speech in Human Behavior: Reflective Inner Speech Cycle (RISC) Model," *Integrative Psychological and Behavioral Science* 59, no. 3 (2025): 56, https://doi.org/10.1007/s12124-025-09925-4.

[10] Nikola A. Kompa, "Inner Speech and 'Pure' Thought – Do We Think in Language?," *Review of Philosophy and Psychology* 15, no. 2 (2024): 645–62, https://doi.org/10.1007/s13164-023-00678-w.

[11] Alexander T. Latinjak et al., "Self-Talk: An Interdisciplinary Review and Transdisciplinary Model," *Review of General Psychology* 27, no. 4 (2023): 355–86, https://doi.org/10.1177/10892680231170263.

[12] Yusuf Hidayat et al., "The Effect of the Combined Self-Talk and Mental Imagery Program on the Badminton Motor Skills and Self-Confidence of Youth Beginner Student-Athletes," *BMC Psychology* 11, no. 1 (2023): 35, https://doi.org/10.1186/s40359-023-01073-x.

[13] Charles Fernyhough and Anna M. Borghi, "Inner Speech as Language Process and Cognitive Tool," *Trends in Cognitive Sciences* 27, no. 12 (2023): 1180–93, https://doi.org/10.1016/j.tics.2023.08.014.

[14] Mokhles M. Abdulghani et al., "Imagined Speech Classification Using EEG and Deep Learning," *Bioengineering* 10, no. 6 (2023): 649, https://doi.org/10.3390/bioengineering10060649.

[15] Valentina Petrolini et al., "The Role of Inner Speech in Executive Functioning Tasks: Schizophrenia With Auditory Verbal Hallucinations and Autistic Spectrum Conditions as Case Studies," *Frontiers in Psychology* 11 (September 2020): 572035, https://doi.org/10.3389/fpsyg.2020.572035.

guidance during complex thought processes.[16] In a complementary line, Kreiner and Eviatar argued that inner speech carries prosodic and rhythmic features that shape how individuals organize emotions and structure internal reasoning, suggesting that internal speech is not merely semantic but also embodied in form.[17] Alexander et al. examined lived cognitive experience and demonstrated through experience-sampling that inner speech appears consistently in daily life, enabling memory, planning, and motivational self-support even among individuals with aphasia, indicating its resilience as a cognitive tool.[18] Earlier developmental work by de Guerrero and more recent conceptual arguments by Patel highlight that inner speech typically emerges first in a learner's primary language and gradually shifts toward a second language as proficiency increases, marking it as a developmental pathway for bilingual fluency.[19]

Together, these studies underscore the cognitive, emotional, and behavioral value of inner speech development and highlight its potential relevance in of second-language learning, particularly in settings that require linguistic system internalization.[20]

Despite growing scholarly consensus on the cognitive and affective roles of inner speech, existing research has largely focused on English and general cognitive tasks, with minimal empirical attention to inner speech in Arabic language acquisition, especially within Islamic educational environments. Although current studies emphasize theoretical conceptualizations, psychological models, and neuroscientific validation, few studies have investigated how structured inner speech manifests in students learning Arabic as a second language or how it contributes to spontaneous speaking fluency (SSF) in real classroom settings. Moreover, no research has explored inner Arabic thought (al-tafkir bi al-'Arabiyyah) as a pedagogical practice in Malaysian Islamic institutions, where language learning intersects with religious identity and immersion policies. Therefore, there remains a significant gap in understanding the development of Arabic inner speech, how learners self-regulate internal language rehearsal, and how intentional cognitive training can enhance spoken fluency. This study addresses these gaps by providing empirical evidence and pedagogical implications grounded in Malaysian Islamic learners' lived linguistic experiences.

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[16] Peter Langland-Hassan, "Inner Speech," *WIREs Cognitive Science* 12, no. 2 (2021): e1544, https://doi.org/10.1002/wcs.1544.

[17] Hamutal Kreiner and Zohar Eviatar, "The Sound of Thought: Form Matters–The Prosody of Inner Speech," *Physics of Life Reviews* 51 (December 2024): 231–42, https://doi.org/10.1016/j.plrev.2024.10.006.

[18] Julianne M. Alexander et al., "Inner Speech in the Daily Lives of People with Aphasia," *Frontiers in Psychology* 15 (March 2024): 1335425, https://doi.org/10.3389/fpsyg.2024.1335425.

[19] María C. M. De Guerrero, "Early Stages of L2 Inner Speech Development: What Verbal Reports Suggest[1]," *International Journal of Applied Linguistics* 14, no. 1 (2004): 90–112, https://doi.org/10.1111/j.1473-4192.2004.00055.x; Shivam Patel, "From Speech to Voice: On the Content of Inner Speech," *Synthese* 199, nos. 3–4 (2021): 10929–52, https://doi.org/10.1007/s11229-021-03274-6.

[20] Famira Racy et al., "Concurrent Validity and Reliability of Representative Inner Speech Questionnaires," *Psychological Reports* 127, no. 2 (2024): 994–1002, https://doi.org/10.1177/00332941221109109.

Despite institutional efforts, many students report that they revert to their native language when processing thoughts, developing ideas, or preparing to speak. This raises the following key questions: To what extent do students in Malaysian Islamic institutions develop inner speech in Arabic? How does inner speech contribute to their spoken fluency? It is vital to address these questions because Arabic thinking has long been considered a hallmark of linguistic and intellectual mastery in Islamic scholarship, aligning with classical pedagogical principles and contemporary psycholinguistic theory.

This study focuses on inner speech as a cognitive and pedagogical bridge to enhance students' Arabic fluency in selected Islamic education institutions in Malaysia. This research is limited to institutions that implement structured Arabic programs and immersive language policies. This study examines students' self-regulated internal verbal processes, the frequency and quality of Arabic inner speech, and their perceived impact on oral performance. Although it does not directly measure neurological processes, it provides empirical insight through mixed-methods approaches, including surveys, interviews, and observation.

The findings of this study are expected to strengthen the theoretical understanding of inner speech in Arabic learning contexts and provide practical recommendations for integrating inner speech strategies into teaching practices. This study contributes to the literature by filling a clear gap in the discourse shifting from external performance-based pedagogy to internal cognitive language development. Ultimately, it underscores the need for instructional approaches that nurture internal Arabic thinking, supporting Malaysia's vision of producing confident speakers, religious thinkers, and global communicators grounded in Arabic linguistic competence (ALC).

Method

This research employed a mixed-methods design to provide a comprehensive understanding of inner speech development among Arabic learners in Islamic education institutions in Malaysia.[21] The study was conceptually grounded in sociocultural theory and psycholinguistic perspectives on inner speech, particularly the works of Lantolf, Frawley and Lantolf, and Guerrero, which emphasize internal verbal mediation, self-regulation, and the role of inner language in speech planning and fluency.[22] These frameworks guided the operational definition of inner speech as internal Arabic self-talk, subvocal rehearsal, and mental formulation preceding oral expression.

[21] John W. Creswell, *A Concise Introduction to Mixed Methods Research* (SAGE Publications, 2021).

[22] Vera John-Steiner and Holbrook Mahn, "Sociocultural Approaches to Learning and Development: A Vygotskian Framework," *Educational Psychologist* 31, no. 3 (1996): 191–206, https://doi.org/10.1207/s15326985ep3103&4_4; James P. Lantolf et al., "Sociocultural Theory and Concept-Based Language Instruction," *Language Teaching* 54, no. 3 (2021): 327–42, https://doi.org/10.1017/S0261444820000348; William Frawley and James P. Lantolf, "Private Speech and Self-Regulation: A Commentary on Frauenglass and Diaz.," *Developmental Psychology* 22, no. 5 (1986): 706–8, https://doi.org/10.1037/0012-1649.22.5.706.

The study was conducted at two Islamic educational institutions in Kedah, Malaysia, selected owing to their strong Arabic immersion policies, structured language programs, and reputation for cultivating communicative Arabic environments. A total of 60 participants, comprising final-year secondary and diploma-level students enrolled in Arabic programs, were involved. Purposive sampling was used to select participants who possessed sufficient exposure to Arabic learning environments and represented institutions with established language policies. Purposively, the two institutions were selected because they demonstrated clear indicators of Arabic immersion practices. These indicators included structured Arabic language programs, regular Arabic-speaking activities, classroom interaction in Arabic, religious memorization practices involving Arabic texts, and institutional encouragement of Arabic use in selected academic and co-curricular settings. Preliminary communication with Arabic teachers and a review of institutional language-related documents confirmed that both institutions provided a communicative environment relevant to the development of Arabic inner speech.

This study used both primary and secondary data. The primary data were obtained from student surveys, semi-structured interviews, and classroom observations involving speaking activities and informal communication settings. The secondary data consisted of institutional language policy documents, curriculum outlines, and relevant academic literature supporting the analysis of inner speech practices in Arabic learning.

The questionnaire comprised four sections. The first section collected demographic information, including educational level, Arabic learning background, and self-rated Arabic proficiency. The second section measured the frequency of Arabic inner speech using a five-point Likert scale ranging from 1 = rarely or never to 5 = daily or almost daily. The third section examined the functional dimensions of inner speech, including grammatical rehearsal, vocabulary retrieval, self-correction, emotional regulation, and confidence building. The fourth section explored the perceived speaking fluency of students using a five-point scale. The questionnaire items were adapted from previous studies on inner speech and self-talk and were modified to fit the Islamic education institutions' Arabic learning context. The semi-structured interview guide consisted of open-ended questions focusing on students' experiences of thinking in Arabic, mental translation, silent rehearsal before speaking, confidence management, and maintaining Arabic inner speech. Interviews were conducted with 15 volunteers representing different proficiency levels. The classroom observation sheet focused on indicators such as silent rehearsal before speaking, self-prompting, hesitation patterns, code-switching, peer-supported correction, and visible signs of self-regulation during oral Arabic tasks.

Data were collected in three stages. First, students completed a structured questionnaire adapted from the inner speech scales used in second language research, measuring self-reported frequency, quality, and contexts of Arabic inner speech. Second, semi-structured interviews were conducted with 15 volunteer participants to explore their cognitive processes while communicating in Arabic,

including internal speech rehearsal, language switching, and mental translation.[23] Third, non-participant classroom observations were conducted in speaking-focused sessions and language activity programs to identify silent rehearsal, self-prompting, and self-regulation patterns.

The questionnaire was administered in printed form during the scheduled class sessions with the permission of the participating institutions and teachers. Participants received a brief explanation of the study objectives and instructions for completing the instrument before completing the questionnaire. The completed questionnaires were coded and entered into IBM SPSS Statistics for quantitative analysis. Descriptive statistics were used to identify patterns of Arabic inner speech, and Pearson correlation analysis was employed to examine the relationship between inner speech frequency and self-rated speaking fluency.

Quantitative data from the questionnaires were analyzed using descriptive statistics to identify the levels and patterns of the participants' inner speech usage. Thematic analysis was used to examine qualitative interview and observation data, applying coding categories aligned with Vygotskian inner speech components: internal verbalization, self-monitoring, and private speech transformation. Triangulation across data sources ensured reliability, and member checking during interviews strengthened the findings' validity.[24] Emergent themes were connected back to theoretical constructs and compared with prior research to illustrate the cognitive-pedagogical dynamics in Arabic inner speech development.

Ethical considerations were observed throughout the research process. Participation was voluntary, and all participants were informed about the study's purpose, their involvement, and their right to withdraw at any stage. Informed consent was obtained from the patients before data collection. The identities and institutional names of the participants were anonymized to maintain confidentiality. All data were used solely for academic purposes and were securely stored. The study was conducted after obtaining permission from the participating Islamic education institutions.

Results and Discussion

Frequency and Nature of Inner Arabic Speech

Survey data from 60 participants revealed distinct patterns in Arabic inner speech development across proficiency levels. Table 1 presents the overall frequency distribution of students' inner speech usage.

Table 1. Frequency distribution of Arabic inner speech usage (n = 60)

Frequency Category	n	%	Context of Usage
Frequently (Daily)	25	41.7	Academic presentations and religious discussions

[23] Tania Buys et al., "A Reflexive Lens on Preparing and Conducting Semi-Structured Interviews with Academic Colleagues," *Qualitative Health Research* 32, no. 13 (2022): 2030–39, https://doi.org/10.1177/10497323221130832.

[24] Rebecca Campbell et al., "Assessing Triangulation Across Methodologies, Methods, and Stakeholder Groups: The Joys, Woes, and Politics of Interpreting Convergent and Divergent Data," *American Journal of Evaluation* 41, no. 1 (2020): 125–44, https://doi.org/10.1177/1098214018804195.

Frequency Category	n	%	Context of Usage
Moderately (3-4 times/week)	16	26.6	Classroom activities and memorization sessions
Occasionally (1-2 times/week)	13	21.7	Informal conversations and exam preparation
Rarely (less than once/week)	6	10.0	Limited to structured assignments only

Approximately 68.3% of the respondents (combining frequent and moderate users) regularly engaged in internal Arabic rehearsal, indicating substantial inner speech activity. Students most often practiced silent self-rehearsal during presentations (n = 38, 63.3%), classroom discussions (n = 34, 56.7%), and memorizing of religious texts (n = 42, 70.0%).

Further analysis revealed differences based on proficiency levels (Table 2).

Table 2. Inner Speech Patterns by Arabic Proficiency Level (N = 60)

Proficiency Level	n	Direct Arabic formulation n (%)	Mental Translation n (%)	Mean self-rated fluency (SD)
Advanced	18	14 (77.8)	4 (22.2)	4.3 (0.52)
Intermediate	26	12 (46.2)	14 (53.8)	3.4 (0.71)
Beginner	16	3 (18.8)	13 (81.2)	2.6 (0.63)
Total	60	29 (48.3)	31 (51.7)	3.4 (0.89)

Direct Arabic Formulation refers to students who primarily express their thoughts directly in Arabic without translating from their L1. Mental translation indicates reliance on L1-to-Arabic translation processes. Standard deviations for fluency ratings are reported in parentheses.

The data indicate a clear developmental progression in inner speech formation across proficiency levels. Among advanced learners (n=18), 14 (77.8%) demonstrated the ability to formulate ideas directly in Arabic without relying on mental translation from their first language, while only 4 (22.2%) still engaged in translation processes. This pattern represents mature inner speech development in which Arabic has become sufficiently internalized to support direct cognitive processing. In contrast, beginner-level learners (n = 16) showed heavy dependence on L1 mediation, with 13 (81.2%) engaging in mental translation and 3 (18.8%) capable of direct Arabic formulation. This finding aligns with Vygotsky's theory that language learners initially rely on external mediation before achieving internal automaticity. The intermediate group (n = 26) represented a transitional developmental phase, with 12 (46.2%) students using direct formulation and 14 (53.8%) students still translating mentally, suggesting a critical period where learners begin shifting from translation-dependent to direct Arabic thinking. A chi-square test of independence was conducted to examine the relationship between proficiency level and inner speech pattern, revealing statistically significant differences ($\chi^2(2) = 15.34$, $p < 0.001$, Cramer's V = 0.51). The results confirmed that proficiency development strongly correlates with reduced reliance on mental translation and increased capacity for direct Arabic cognitive processing.

Qualitative data further clarify how Arabic inner speech functions as a form of silent rehearsal before oral production. One advanced learner described the internal preparation process as follows: "*Before I speak Arabic, I first whisper the sentence in*

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my mind." Sometimes I repeat it silently to make sure it sounds correct." (Student A, advanced level)

This excerpt demonstrates that inner speech functions as an internal space for grammatical checking and speech planning. The learner first tests the sentence internally, repeats it silently, and evaluates whether it sounds acceptable before producing Arabic externally. Such a process indicates that inner speech is not merely a passive mental habit but an active cognitive strategy that helps learners organize linguistic forms before speaking.

The transition from mental translation to direct Arabic formulation is also reflected in an intermediate learner's experience: "*At first, I always think in Malay and translate." However, after many speaking practices, I try to form the sentence in Arabic directly. It feels more natural now.*" (Student B, intermediate level)

This statement illustrates a developmental shift in the inner speech of second-language At an earlier stage, the learner depended on Malay as the initial language of thought and then translated ideas into Arabic. However, repeated speaking practice gradually enabled the learner to directly develop ideas in Arabic. This supports the view that Arabic fluency develops not only through external oral practice but also through the internalization of Arabic as a language of thought. These findings align with Lantolf's view that as proficiency develops, language learners transition from external to internal verbal regulation.

Inner Speech as a Fluency and Confidence Strategy

Table 3 examines the self-regulatory functions of inner speech beyond linguistic rehearsal (LR).

Table 3. Functions of Arabic Inner Speech Reported by Students (N=60, Multiple Responses Allowed)

Function	n	%	Example Behaviors
Grammatical rehearsal	52	86.7	Pre-formulating sentences and verb conjugation checking
Confidence building	38	63.3	Self-encouragement phrases
Emotional regulation	31	51.7	Calming self-talk before speaking
Vocabulary retrieval	44	73.3	Mental word searches and synonym exploration
Self-correction	40	66.7	Monitoring and adjustment of internal errors

The multifunctional nature of inner speech demonstrates its role beyond linguistic preparation. Students reported using Arabic self-talk for emotional management, consistent with Guerrero's conceptualization of inner speech as a self-regulatory tool.

A Pearson product-moment correlation analysis was conducted to examine the predictive relationship between inner speech practice and perceived speaking fluency. Prior to the main analysis, the statistical assumptions were rigorously tested. The normality of the distribution was assessed using Shapiro-Wilk tests for both inner speech frequency ($W = 0.971$, $p = 0.152$) and speaking fluency self-rating ($W = 0.968$, $p = 0.114$), confirming that both variables met the normality assumption. Linearity was verified through visual inspection of scatterplots, which showed a clear linear trend without curvilinear patterns. Homoscedasticity was confirmed by examining the scatter of residuals, which appeared randomly and

evenly distributed across the regression line. No outliers were identified using standardized residuals exceeding ±3 standard deviations.

The results revealed a moderate positive correlation between the frequency of Arabic inner speech practice (measured on a 5-point Likert scale where 1=rarely or never, 2=occasionally, 3=sometimes, 4=often, and 5=daily or almost daily) and self-rated speaking fluency (measured on a 5-point scale where 1=very low fluency, 2=low fluency, 3=moderate fluency, 4=high fluency, and 5=very high fluency). The correlation coefficient was $r = 0.58$, $n = 60$, $p < 0.001$, with a 95% confidence interval of 0.38–0.73. This correlation is both statistically and practically significant, indicating that approximately 34% of the variance in speaking fluency ($r^2 = 0.34$) can be explained by inner speech frequency. In practical terms, students who reported engaging in Arabic inner speech more frequently tended to rate their speaking fluency significantly higher than those who practiced inner speech less regularly.

A partial correlation analysis was conducted to control for the potential confounding effect of overall proficiency level. The correlation between inner speech frequency and speaking fluency remained statistically significant even when controlling for proficiency level ($r_{partial} = 0.51$, $p < 0.01$), suggesting that inner speech practice contributes to fluency development beyond the general effect of language proficiency. This finding is particularly important because it indicates that inner speech is not merely a byproduct of advanced proficiency but rather an active cognitive mechanism that facilitates fluency improvement across different proficiency stages.

These findings provide empirical support for the Vygotskian theory that internalized speech serves as a cognitive tool supporting the regulation of external language performance. The moderate strength of the correlation that although inner speech is an important predictor of fluency, it is not the sole determinant. Vocabulary breadth, grammatical accuracy, authentic language exposure, and general communicative confidence also significantly contribute to overall speaking fluency. Nevertheless, the consistent positive relationship observed in this study highlights inner speech as a modifiable factor that can be targeted through pedagogical interventions to enhance Arabic speaking performance.

The qualitative findings also show that Arabic inner speech supports confidence building and emotional regulation during speaking tasks. One participant described using Arabic self-talk before speaking: "*Before I speak, I quietly say to myself* أستطيع أن أتكلم *or* أستطيع أن تتحدث الآن *It boosts my confidence.*" (Student C)

Another participant explained how internal rehearsal helped prepare responses during classroom interaction: *"I practice short phrases in my head during class so I am ready when the teacher asks.."* (Student D)

These excerpts demonstrate that inner speech functions as a linguistic and psychological support system. Linguistically, it helps learners to prepare phrases before speaking. Psychologically, it reduces anxiety and increases readiness to participate in oral interactions. Correlation analysis revealed a moderate positive relationship ($r = 0.58$, $p < 0.01$) between the frequency of inner speech practice and self-rated speaking fluency, suggesting that internal rehearsal is a meaningful predictor of confidence in communication.

Challenges in Developing Arabic Inner Speech

Despite overall positive engagement, the students identified several obstacles, as summarized in Table 4.

Table 4. Barriers to Arabic inner speech development (n = 60, multiple responses allowed)

Barrier	n	%	Impact Level
Limited vocabulary repertoire	47	78.3	High
Habitual mental translation	43	71.7	High
Lack of Arabic exposure outside class	39	65.0	Moderate
Cognitive Overload in Complex Topics	36	60.0	Moderate
Automatic code-switching to Malay	34	56.7	Moderate
Anxiety about grammatical accuracy	28	46.7	Low-Moderate

The challenge of maintaining Arabic inner speech is clearly reflected in one student's response: *"Sometimes my brain switches automatically to Malay, especially when I do not know the Arabic word.."* (Student E, beginner level)

This excerpt highlights the close relationship between vocabulary mastery and the stability of inner speech in Arabic. When learners lack sufficient Arabic lexical resources, their internal language system tends to automatically return to the dominant language, in this case Malay. This that inner speech development cannot be separated from vocabulary depth, exposure intensity, and habitual language use. These observations mirror findings in previous studies on inner speech in second-language, where cognitive constraints and linguistic anxiety reduce internal verbal processing.

The results substantiate inner speech as a key component of Arabic fluency development in Islamic institutions in Malaysia. Students who actively engage in internal Arabic rehearsal exhibit higher confidence in fluency, aligning with the sociocultural theory that internal dialogue precedes external performance.[25] The developmental progression from translation-dependent to direct Arabic formulation mirrors Lantolf's linguistic internalization model.[26]

However, this study extends prior literature by demonstrating how religious-academic environments—such as pesantren-style Malaysian institutions—facilitate purposeful inner speech aligned with spiritual and academic identity. The integration of Arabic in prayer (salat), memorization (tahfiz), and classroom discourse creates a unique ecosystem in which linguistic and devotional inner speech is simultaneously conveyed. Students reported using Qur'anic phrases and prophetic expressions (e.g., ليس منا من، أفلا تنظرون، أفلا تتفكرون ...) alongside everyday functional Arabic such as أريد أن...، أحتاج إلى...، تستطيع أن... as internal prompts, indicating that the spiritual and communicative dimensions of inner speech are enriched by Islamic linguistic content.

The high percentage of vocabulary-related barriers (78.3%) indicates that lexical development must precede sophisticated inner speech production. This

[25] Lev Semenovich Vygotskiĭ, *The Collected Works of L.S. Vygotsky: Volume 1: Problems of General Psychology, Including the Volume Thinking and Speech* (Springer Science & Business Media, 1987).

[26] Lantolf et al., "Sociocultural Theory and Concept-Based Language Instruction."

finding has pedagogical implications: teachers should prioritize vocabulary expansion through contextualized, immersive activities over isolated memorization. Additionally, the persistence of mental translation among 71.7% of learners suggests that structured scaffolding, such as guided inner monologue exercises, Arabic think-aloud protocols, and gradual reduction of L1 use, is essential for fostering direct Arabic cognitive processing.

These findings highlight the importance of incorporating explicit inner speech training into Arabic pedagogy in Malaysia, including: (1) metacognitive awareness-raising about internal language processes, (2) guided self-talk routines in authentic contexts, (3) vocabulary enrichment programs targeting high-frequency spoken Arabic, and (4) immersive verbal tasks that reduce reliance on translation. This study contributes a new applied perspective to existing theoretical understandings of internal language mechanisms in second-language learning, particularly within Islamic educational contexts.

These findings highlight the importance of incorporating guided inner speech exercises, self-talk routines, and immersive verbal tasks into Arabic pedagogy in Malaysia, contributing a new applied perspective to existing theoretical understandings of internal language mechanisms in second-language learning.

The present findings reinforce recent cognitive scholarship that positions inner speech as a language-based cognitive tool for planning, attention control, and verbal working memory.[27] Kompa and Mueller argue that talking to oneself functions as a cognitive strategy for organizing thought and reducing mental load rather than treating inner speech merely as silent verbalization.[28] Inner speech also carries prosodic and rhythmic qualities that help structure internal reasoning before the production of spoken language.[29] Evidence from Anendophasia research shows that reduced inner voice experience is associated with measurable differences in verbal memory and cognitive performance.[30] Neuropsychological evidence from aphasia further a bidirectional relationship between inner speech and executive function.[31] In this study, learners who frequently rehearsed Arabic internally appeared to be better able to plan grammatical structures, retrieve vocabulary, and regulate hesitation before speaking.

The positive correlation between Arabic inner speech and perceived fluency also resonates with contemporary research on self-talk and self-regulated learning.[32] Racy and Morin showed that self-talk and inner speech are closely

[27] Fernyhough and Borghi, "Inner Speech as Language Process and Cognitive Tool."

[28] Nikola A. Kompa and Jutta L. Mueller, "Inner Speech as a Cognitive Tool—or What Is the Point of Talking to Oneself?," *Philosophical Psychology* 37, no. 8 (2024): 1971–94, https://doi.org/10.1080/09515089.2022.2112164.

[29] Kreiner and Eviatar, "The Sound of Thought."

[30] Johanne S. K. Nedergaard and Gary Lupyan, "Not Everybody Has an Inner Voice: Behavioral Consequences of Anendophasia," *Psychological Science* 35, no. 7 (2024): 780–97, https://doi.org/10.1177/09567976241243004.

[31] Mackenzie E. Fama et al., "Evidence from Aphasia Suggests a Bidirectional Relationship between Inner Speech and Executive Function," *Neuropsychologia* 204 (November 2024): 108997, https://doi.org/10.1016/j.neuropsychologia.2024.108997.

[32] Latinjak et al., "Self-Talk."

related to self-regulation, mindfulness, and self-focused awareness.[33] This supports this finding that Arabic inner speech helps learners manage anxiety and prepares them for oral performance. Recent research on Arabic language learning has also emphasized that non-native learners require strategies that strengthen exposure, communicative practice, vocabulary depth, and feedback.[34] Therefore, inner speech in Arabic should be understood not only as a private mental habit but also as a trainable self-regulatory strategy that connects linguistic knowledge with oral fluency.

In multilingual learning contexts, the present findings that Arabic inner speech develops through gradual language choice and language control.[35] Recent bilingual research shows that proficiency, acquisition context, social environment, and emotional experience shape inner speech.[36] Research on multilingual Arabic speakers demonstrates that spontaneous inner speech is sensitive to linguistic context and code-switching patterns.[37] This supports this study's finding that beginner learners often depend on Malay-mediated mental translation, whereas advanced learners increasingly develop thoughts directly in Arabic.

At a deeper level, Arabic inner speech can be understood as an intrapersonal communicative process through which learners interpret experience, regulate attention, and prepare oral action.[38] The phenomenology of inner speech also that silent verbalization is not uniform because it may involve condensed, dialogic, spontaneous, and speech-production-based mechanisms before overt speech emerges.[39] Private speech provides a transitional scaffold between outer and inner speech in second-language oral production, enabling learners to coordinate language processing with higher-order thought regulation.[40] In bilingual acquisition, internal and external factors such as length of exposure, richness of the

[33] Famira Racy and Alain Morin, "Relationships between Self-Talk, Inner Speech, Mind Wandering, Mindfulness, Self-Concept Clarity, and Self-Regulation in University Students," *Behavioral Sciences* 14, no. 1 (2024): 55, https://doi.org/10.3390/bs14010055.

[34] Sultan Almelhes, "Enhancing Arabic Language Acquisition: Effective Strategies for Addressing Non-Native Learners' Challenges," *Education Sciences* 14, no. 10 (2024): 1116, https://doi.org/10.3390/educsci14101116.

[35] Reem Dallasheh Khatib et al., "Spontaneous Inner Speech in Multilinguals: Short-Term and Long-Term Effects on Code-Switching," *Journal of Cultural Cognitive Science* 10, no. 1 (2026): 49–63, https://doi.org/10.1007/s41809-025-00191-9.

[36] Julianne M. Alexander and Raquel T. Anderson, "Inner Speech and Language Choice Among Bilingual Adults: A Scoping Review of Methods and Applications," *International Journal of Bilingualism*, June 10, 2026, 13670069261453227, https://doi.org/10.1177/13670069261453227.

[37] Dallasheh Khatib et al., "Spontaneous Inner Speech in Multilinguals."

[38] Constance Bainbridge et al., "Reconsidering Intrapersonal Communication through an Interdisciplinary Lens," *Frontiers in Psychology* 16 (August 2025): 1569493, https://doi.org/10.3389/fpsyg.2025.1569493.

[39] Jaydan Pratts et al., "Bridging Phenomenology and Neural Mechanisms of Inner Speech: ALE Meta-Analysis on Egocentricity and Spontaneity in a Dual-Mechanistic Framework," *NeuroImage* 282 (November 2023): 120399, https://doi.org/10.1016/j.neuroimage.2023.120399.

[40] Rong Jiang et al., "The Neural Mechanisms of Private Speech in Second Language Learners' Oral Production: An fNIRS Study," *Brain Sciences* 15, no. 5 (2025): 451, https://doi.org/10.3390/brainsci15050451.

L2 environment, and linguistic domain shape how learners develop vocabulary, morphology, and syntax. [41] Self-regulated learning strategies and Arabic environmental support can strengthen metacognitive control, persistence, and communicative readiness in language proficiency development for Arabic learners.[42]

Taken together, these findings position inner speech training as a cognitively grounded direction for Arabic pedagogy. Although previous Arabic learning practices have often emphasized external immersion, oral drills, and classroom interaction, this study shows that fluency also depends on the internal formation of language before speech is produced. Structured metacognitive routines, guided internal rehearsal, and gradual reduction of mental translation can help learners move from translating ideas into Arabic to thinking directly in Arabic. This shift is especially important in the context of multilingual Islamic education, where learners often negotiate between Malay, English, and Arabic during communication. Therefore, the study contributes a psycholinguistic-pedagogical perspective by demonstrating that Arabic fluency is built not only through visible speaking practice but also through the hidden cognitive process of internal Arabic self-regulation.

Conclusion

This study concludes that inner speech functions as a significant cognitive mechanism in the development of Arabic speaking fluency (ASF) among learners in Malaysian Islamic education institutions. The findings show that students who regularly engage in Arabic inner speech demonstrate stronger perceived fluency, better grammatical readiness, greater vocabulary accessibility, more active self-correction, and improved emotional regulation during oral performance. The theoretical novelty of this study lies in its extension of inner speech theory into the acquisition of the Arabic language by conceptualizing inner Arabic thought as a developmental bridge between linguistic knowledge and spontaneous communicative action. Rather than viewing fluency only as the result of external immersion, classroom interaction, or oral drills, this study demonstrates that internal verbal mediation also shapes Arabic fluency, especially when learners gradually move from Malay-mediated mental translation toward direct Arabic formulation.

This study contributes to Southeast Asian Arabic pedagogy by showing that Islamic educational environments in Malaysia provide a distinctive ecology for inner speech development, where Arabic is not only an academic language but also a devotional and identity-forming medium. Practically, the findings suggest that Arabic teachers should integrate guided self-talk, structured inner rehearsal, vocabulary-based internal prompting, and metacognitive reflection into speaking

[41] Susan Logue et al., "The Impact of Internal and External Factors across Language Domains and Features in Sequential Bilingual Acquisition," *Journal of Child Language* 52, no. 6 (2025): 1383–412, https://doi.org/10.1017/S0305000924000497.

[42] Saproni Muhammad Samin et al., "Strategies of Arabic Students' Self-Regulated Learning Improvement in Language Proficiency in The Disruption Era," *Arabiyat : Jurnal Pendidikan Bahasa Arab Dan Kebahasaaraban* 9, no. 2 (2022): 165–77, https://doi.org/10.15408/a.v9i2.22828.

instruction to help learners reduce dependence on translation and build confidence before oral production. Nevertheless, this study is limited to 60 learners from two Islamic institutions in Kedah and relies partly on self-reported inner speech. Therefore, future research should employ longitudinal, experimental, and cross-institutional designs, including digital-based inner speech training through AI voice assistants, speech-recognition tools, or mobile Arabic self-talk diaries. Ultimately, cultivating inner Arabic thinking offers a visionary direction for Arabic language education: producing learners who are not only able to speak Arabic fluently but also capable of using Arabic as a language of reflection, knowledge, self-regulation, and global Islamic communication.

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Author's Contribution Statement

M led the study's conceptualization, directed the overall research design, and wrote the original manuscript draft. NH, MM, and NAF contributed to the formulation of the research objectives. NH conducted the literature review, data collection, and statistical analysis. MM contributed to instrument refinement, methodological validation, and qualitative data coding. NAF coordinated institutional access in Malaysia, facilitated fieldwork, and supported interview and observation procedures. All authors participated in data interpretation, critical revisions of the manuscript, and collectively provided final approval.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have influenced the work reported in this paper.

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During manuscript preparation, the authors used ChatGPT (OpenAI) to assist with language editing and idea organization. The authors have carefully reviewed and edited the AI-assisted content and take full responsibility for the final content of this manuscript.

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Biography of the Authors



Masnun is a seasoned educator and researcher in the field of Arabic language education. He earned his Bachelor's degree (S1) in Arabic Education from STAIN Mataram in 1999. He pursued further studies at UIN Maulana Malik Ibrahim Malang, where he completed his Master's degree (S2) in 2009 and Doctorate (S3) in 2020, specializing in Arabic Language Education. His academic interests include Arabic curriculum development, instructional methodology, and the integration of Islamic values in language teaching. With over two decades of experience, Masnun actively advances Arabic pedagogy within Indonesia's Islamic educational institutions. He can be contacted at masnun@uiidalwa.ac.id.



Nur Hanifansyah earned his Bachelor's degree in Islamic Education from Sekolah Tinggi Agama Islam Darullughah Wadda'wah. He pursued his Master's degree in Arabic Language Education at the Institut Agama Islam Darullughah Wadda'wah. He has completed his doctoral degree (S3) in Islamic Education at Universitas Islam Internasional Darullughah Wadda'wah. He is currently pursuing a second doctoral degree in Arabic Language Education at the same university. His academic interests include the integration of Islamic education and Arabic language instruction, as well as the development of technology-based learning strategies in Islamic boarding school environments. He can be reached at nurhanifansyah@uiidalwa.ac.id.



Menik Mahmudah obtained her Bachelor's and Master's degrees in Arabic Language Education from Universitas Negeri Malang. She is currently pursuing her doctoral degree at the same university. She currently serves as a lecturer in the Department of Arabic Language Education at IAI Al-Yasini Pasuruan. Her academic interests include Arabic language pedagogy, curriculum development, and innovative instructional strategies for enhancing language learning outcomes. She can be contacted at this email: menikmahmudah.pba.alyasini@gmail.com.



Nur Aina Faqihah is an alumna of Maktab Mahmud Yan, Kedah, Malaysia, where she completed her secondary Islamic education with a strong focus on Arabic studies. She continued her academic journey at the International Islamic University Malaysia (IIUM), pursuing a Bachelor-level Foundation (Asasi) in Arabic. Her academic interests include Arabic language learning in Islamic institutions, cognitive strategies for language acquisition, and immersive Arabic environments in Southeast Asian boarding school contexts. She is actively involved in academic and linguistic activities aimed at strengthening the Arabic proficiency of youth in Malaysia. She can be reached at aina.faqihah@live.iium.edu.my.