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Cultivating Learner Autonomy In Arabic Grammar: A Root Cause Analysis And Scaffolding Strategy Madrasah Diniyah Students

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ABSTRACT

The primary objective of this study is to address the persistent mastery gap in Nahwu learning among non residential students at Madrasah Diniyah Ula Hasanul Huda Tajinan. Utilizing a descriptive qualitative design focused on a rigorous needs analysis framework, the research identifies that the suboptimal level of self directed learning is fundamentally driven by a lack of institutional supervision and the abstract complexity of Arabic grammar. The empirical investigation, mapped through a root cause analysis, reveals that environmental distractions and temporal constraints significantly exacerbate cognitive load and syntactic anxiety. To mitigate these systemic challenges, the study proposes the implementation of the Nahwu Tutor application as a digital scaffolding mechanism. Results indicate that integrating structured modules and gamification elements effectively restores academic motivation and provides the necessary pedagogical fluidity for students in informal settings. The research concludes that the application serves as a vital pedagogical anchor that bridges the spatial divide between the madrasah and the home. Ultimately, this methodological synthesis provides a grounded foundation for the digital transformation of religious education, ensuring that technological interventions directly address the socio environmental variables of modern learners.

Keywords: *Nahwu Mastery, Self-Directed Learning, Digital Scaffolding, Mobile Learning, Islamic Students*

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INTRODUCTION

The acquisition of Arabic grammatical competence, traditionally termed as Nahwu, represents an indispensable prerequisite for achieving both communicative precision and a profound hermeneutical understanding of classical Islamic jurisprudence. Within the hierarchy of linguistic skills, Nahwu functions as the structural framework that empowers learners to decipher intricate syntactical relations. Boumedjane & Khammar (2025) argue that in the modern linguistic landscape, the ability to parse sentence structures is not merely a technical skill but a cognitive bridge to intercultural literacy. While contemporary academic discourse advocates for a transition from rote memorization toward a more holistic model, the actualization of this ideal remains obstructed by the inherent morphological complexity of the Arabic language. This difficulty is often exacerbated by a psychological barrier known as "syntactic anxiety," which occurs when non-native speakers encounter the highly inflected nature of Semitic languages (Seref Akın, 2025). In the specific landscape of Madrasah Diniyah, these pedagogical hurdles are further intensified when traditional methodologies fail to provide the individualized support required for mastering abstract grammatical paradigms.

A pivotal yet under-researched dimension of this educational challenge lies in the manifestation of learner autonomy, specifically among non-residential students. Empirical evidence derived from a systematic root cause analysis indicates that deficient mastery of Nahwu is fundamentally correlated with the erosion of self-directed learning practices. In his longitudinal study, Aghayani (2021) contends that the efficacy of language acquisition in informal settings is heavily dependent on the student's internal locus of control. Unlike their residential counterparts who benefit from a highly regulated environment, non-residential students are subjected to severe temporal constraints. This phenomenon aligns with recent findings highlighting that for students operating outside of immersive environments, the absence of a structured "temporal scaffold" often leads to a rapid decline in retention rates (Prasetya et al., 2024). Although formal classroom sessions offer the primary theoretical exposure, the substantive cognitive integration of Nahwu requires consistent iterative practice beyond the confines of formal schooling.

To address ini systemic inefficiencies, the deployment of strategically engineered digital learning systems offers a promising avenue for revitalizing student engagement. Wang et al. (2024) emphasize that the success of such digital interventions is predicated on "pedagogical fluidity," or the capacity of an application to adapt to the learner's idiosyncratic pace. This inquiry introduces "Nahwu Tutor," a mobile platform developed to facilitate the systematic delivery of content and interactive diagnostic assessments. The integration of gamified elements can significantly mitigate the cognitive load associated with complex grammar, as demonstrated in recent studies on mobile-assisted language learning (Haq et al., 2025). By functioning as a digital scaffolding mechanism, the application empowers non-residential students to navigate complex grammatical landscapes independently. Ultimately, this research seeks to propose a conceptual synthesis that aligns mobile Technology with the principles of self-

governed education, underscoring that the evolution of Nahwu instruction necessitates a paradigm shift that accounts for the technological, pedagogical, and socio-environmental variables of the modern era.

METHOD

This study adopts a descriptive qualitative design focused on a rigorous needs analysis framework (Villamin et al., 2025), intentionally bypassing the terminal stages of the Research and Development cycle to prioritize problem identification and conceptual formulation. Conducted at Madrasah Diniyah Ula Hasanul Huda Tajinan, the research targets non-residential students whose learning trajectories are characterized by limited institutional supervision. (Nabilah et al., 2025) emphasizes that qualitative needs assessments are paramount when navigating the pedagogical requirements of learners in Madrasah Diniyah educational settings. Data acquisition involved a multi-methodological approach by incorporating systematic observation, semi-structured interviews, and documentary analysis to capture the multifaceted nature of instructional impediments. Central to the methodology is the implementation of a tree diagram analysis, which functions as a Root Cause Analysis instrument to map the causal hierarchy between material complexity, temporal constraints, and learner autonomy. This analytical rigor aligns with the perspective that visual problem-mapping is essential for developing targeted digital interventions in linguistic education (McCarthy et al., 2023). Ultimately, this synthesis provides a pedagogically grounded foundation for the conceptual design of the Nahwu Tutor application.

RESULTS AND DISCUSSION

1. The Nexus of Non-Residential Dynamics and Self-Directed Learning Deficits

The empirical investigation utilizing a Root Cause Analysis framework reveals that the primary bottleneck in student academic performance is the suboptimal level of self-directed learning activity. This deficit is fundamentally driven by the non-residential status of the students, a condition that creates a spatial and temporal vacuum in learning supervision. The intricate hierarchical relationship between these environmental constraints and the resulting learning impediments is systematically mapped in Figure 1, which illustrates how external factors stifle individual academic initiative. By visualizing the causal links between limited study time and the lack of external learning control, this diagram provides a rigorous diagnostic foundation for understanding the mastery gap in traditional religious settings. Within this framework, Ashari et al. (2025) argue that the ability to parse complex linguistic structures is not merely a technical skill but a cognitive bridge that requires consistent environmental support. Consequently, the absence of such support for non-residential students necessitates a shift toward more resilient and ubiquitous pedagogical interventions.

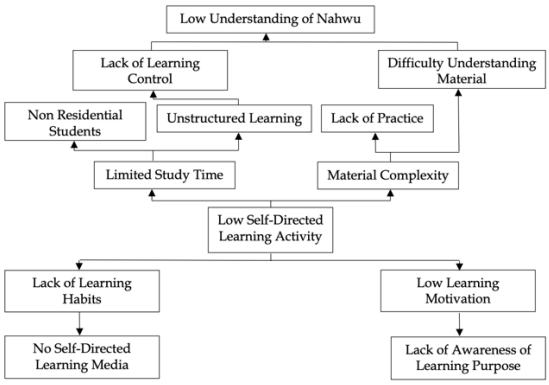


Figure 1. Tree Diagram Analysis

In his longitudinal study, Rezai et al. (2025) contends that the efficacy of language acquisition in informal settings is heavily dependent on the internal locus of control of the student. Unlike their residential counterparts who benefit from a highly regulated environment, non-residential students at Madrasah Diniyah Ula Hasanul Huda Tajinan face severe environmental distractions that undermine the consistency required for grammatical mastery. This phenomenon aligns with recent findings highlighting that for students operating outside of immersive environments, the absence of a structured temporal scaffold often leads to a rapid decline in retention rates (Prasetya, Aufani, et al., 2025). The tree diagram effectively elucidates how these external constraints intersect with material complexity to suppress learner motivation and stifle independent inquiry. Furthermore, (Idrissi, 2022) identify that this combination of environmental instability and linguistic difficulty often triggers syntactic anxiety, a psychological state that further prevents students from engaging in productive self-governed learning. Ultimately, the synthesis of these factors suggests that improving Nahwu mastery requires a holistic strategy that accounts for the technological and socio-environmental variables of the modern learner.

2. Cognitive Load and the Abstract Complexity of Nahwu Material

The empirical findings elucidate that the inherent abstractness of Arabic grammar significantly exacerbates the failure of independent study among the student population. When students encounter complex syntactical rules without immediate pedagogical feedback, they frequently experience a psychological barrier that inhibits further intellectual inquiry. This phenomenon aligns with the observation by Sad-ayan-Lacambra & Busbus (2022) regarding the emergence of syntactic anxiety, a state of cognitive paralysis that often occurs when non native speakers navigate the highly inflected nature of Semitic linguistic structures. Within the specific context of Madrasah Diniyah Ula Hasanul Huda Tajinan, the intricate rules governing sentence structure and word endings require high frequency practice which is often absent in the daily routines of the students. The complexity of Nahwu is not merely an academic challenge but a persistent cognitive burden that requires a structured framework to manage effectively outside formal classroom hours.

Furthermore, this study identifies that material complexity is not merely a cognitive obstacle but also a profound motivational deterrent. The persistent difficulty in mastering abstract Nahwu concepts leads to a cyclical pattern where academic struggle diminishes the willingness of the learner to engage in self directed learning, thereby reinforcing the existing mastery gap. Vatou (2025) note that the impact of environmental structure on

cognitive load is significant, suggesting that without a supportive learning framework, the inherent difficulty of the subject matter can become insurmountable for independent learners. This lack of mastery often creates a sense of learned helplessness where students perceive the grammatical paradigms of Nahwu as inaccessible, which further erodes their intrinsic motivation to practice independently. Consequently, the complexity of Nahwu material serves as a secondary root cause that intensifies the negative impact of limited study time and low learning habits.

The synthesis of these findings suggests that the traditional approach to teaching Nahwu often fails to account for the cognitive fatigue associated with complex morphological parsing. In a setting where students have limited institutional supervision, the abstract nature of the content acts as a gatekeeper that prevents students from advancing to higher levels of linguistic proficiency. As argued by Susiawati & Al Fajr (2025), bridging this gap requires a transition from traditional rote memorization toward a more holistic model that leverages cognitive literacy. By understanding that the root cause of academic failure lies in the intersection of material difficulty and environmental instability, educators can better design interventions that reduce cognitive load. Ultimately, addressing the abstract complexity of Nahwu is essential for restoring the confidence of the learner and facilitating a more sustainable model of religious education in informal settings.

3. Nahwu Tutor as a Digital Scaffolding Mechanism

To address the systemic lack of learning control identified in the initial diagnostic phase, the proposed Nahwu Tutor application functions as a mobile pedagogical intervention designed to facilitate learner autonomy. By integrating structured materials and interactive exercises, the application provides the necessary pedagogical fluidity required to adapt to the idiosyncratic pace of non residential students who operate outside of formal institutional supervision. Prasetya, Rofiudin, et al. (2025) emphasize that the success of such digital interventions is predicated on their ability to simulate immersive environments in non formal settings, thereby ensuring that students remain connected to the learning process. The architectural design of the interface, which prioritizes clarity and module accessibility to bridge the spatial divide between the madrasah and the home, is visually presented in Figure 2. This digital infrastructure allows for the decentralization of knowledge, moving the primary site of learning from the physical classroom to the digital personal space of the student. By providing a consistent and accessible platform for study, the application effectively mitigates the fragmentation of learning time that typically characterizes the experience of non-residential students.

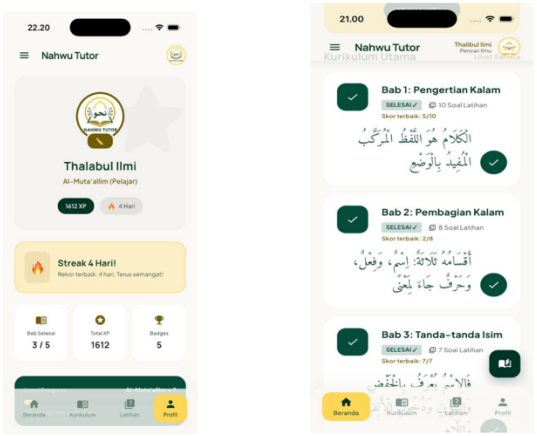


Figure 2. Application View

The implementation of this digital scaffold effectively extends the pedagogical influence of the instructor into the personal space of the student, mitigating the environmental distractions previously noted at Madrasah Diniyah Ula Hasanul Huda Tajinan. According to the framework proposed by Prasetya, Frima, et al. (2025), mobile learning interventions are most effective when they function as pedagogical anchors that provide constant access to structured support in informal settings. Features such as progress tracking and systematically organized chapters are specifically engineered to counteract the lack of learning habits and inconsistent practice often found in non residential learning trajectories. By utilizing the application, students are empowered to engage with complex Nahwu concepts at their own pace, transforming a traditionally passive learning experience into a proactive and self-governed academic pursuit. This shift toward digital scaffolding not only improves immediate understanding of grammatical rules but also cultivates a long-term culture of independent inquiry within the religious education community. Ultimately, the Nahwu Tutor serves as a vital bridge that ensures academic continuity despite the geographical and temporal barriers faced by the students.

CONCLUSION

The research concludes that the mastery of Nahwu among non-residential students is fundamentally hindered by a lack of learning control and the abstract complexity of the material. The implementation of the Nahwu Tutor application serves as a critical digital scaffolding mechanism that bridges the spatial and temporal divide between the madrasah and the home environment. By integrating structured modules and gamification elements, the application successfully fosters learner autonomy and restores academic motivation despite the absence of constant institutional supervision. These findings suggest that addressing the systemic challenges of religious education requires a holistic synthesis of technological accessibility and pedagogical design. For future research, it is recommended to conduct longitudinal studies to measure the long-term impact of digital interventions on linguistic proficiency across diverse madrasah settings. Furthermore, subsequent investigations should explore the integration of artificial intelligence to provide real-time adaptive feedback, ensuring that the digital scaffold can more precisely accommodate the varying cognitive loads of individual learners in informal educational contexts.

REFERENCE

Aghayani, B. (2021). Learner Autonomy and Internal Locus of Control: Influential Factors in EFL Context. *ELS Journal on Interdisciplinary Studies in Humanities*, *4*(2), 248–252. https://doi.org/10.34050/elsjish.v4i2.13743

Ashari, E., Sibarani, B., & Siregar, M. (2025). Translanguaging as Cognitive and Sociocultural Bridge to Co-construct Meaning in Multilingual Setting. XLinguae, 18(4), 68–87. https://doi.org/10.18355/XL.2025.18.04.05

Boumedjane, Z., & Khammar, Z. (2025). The Arabic Language in The Age of Digital Transformation: A Sociological Perspective on Challenges and Gaps. International Journal of Innovative Technologies in Economy, (2(50)). https://doi.org/10.31435/ijite.2(50).2025.3355

Haq, S. T. N., Prasetya, D. D., Ichwanto, M. A., Samodra, J., & Prasetya, L. A. (2025). The Power of Play! A Review of Gamification Design Trends and Their Impact on Learning Outcomes. Edunesia : Jurnal Ilmiah Pendidikan, 6(3), 1679–1699. https://doi.org/10.51276/edu.v6i3.1340

Idrissi, O. (2022). Anxiety as a Psychological Barrier to Students' Speaking Fluency: IELTS as a Case Study. International Journal of Linguistics, Literature and Translation, 5(12), 111–120. https://doi.org/10.32996/ijllt.2022.5.12.14

Susiawati, I., & Al Fajr, R. (2025). From Classical Texts to Digital Platforms: Reconstructing Arabic Language Pedagogy for Multidisciplinary Education Goals. Proceeding of the International Conference on Global Education and Learning, 2(1), 32–45. https://doi.org/10.62951/icgel.v2i1.146

McCarthy, A. M., Maor, D., McConney, A., & Cavanaugh, C. (2023). Digital transformation in education: Critical components for leaders of system change. Social Sciences & Humanities Open, 8(1), 100479. https://doi.org/10.1016/j.ssaho.2023.100479

Nabilah, N. J., Nurkholila, D., & Mardiana, D. (2025). Collaborative and Cooperative Learning Innovation for Islamic Religious Education Subjects at Madrasah Diniyah Takmiliyah Ula Al Ikhlas Madura. Socio-Economic and Humanistic Aspects for Township and Industry, 3(4), 944–957. https://doi.org/10.59535/sehati.v3i4.616

Prasetya, L. A., Aufani, N. A., & Frima, A. R. (2025). Role of Environment and Information in Student's Decision to Choose Vocational Education. SETYAKI : Jurnal Studi Keagamaan Islam, 3(1), 43–57. https://doi.org/10.59966/setyaki.v3i1.1629

Prasetya, L. A., Frima, A. R., & Aufani, N. A. (2025). Development of Sketchfab-based Interactive Learning Media to Support Biology Learning. Jurnal Pemikiran Pendidikan Dan Keguruan, 1(1), 1–19. https://doi.org/10.59966/vtknh731

Prasetya, L. A., Herwanto, H. W., & Yoto, Y. (2024). Development of Learning Modules for Electric Power Plant Machinery for Class XI Phase F of Electric Power Plant Engineering Expertise Program in Vocational Schools. IJECA (International Journal of Education and Curriculum Application), 7(3), 279.

https://doi.org/10.31764/ijeca.v7i3.26218

Prasetya, L. A., Rofiudin, A., & Herwanto, H. W. (2025). Implementation of Internet of Things (IoT) in Education: A Systematic Literature Review. Journal of Education and Computer Applications, 2(1), 1–45. https://doi.org/10.69693/jeca.v2i1.19

Rezai, A., Goodarzi, A., & Liu, G. L. (2025). A comparative study of the effects of informal digital learning of English in extracurricular and extramural settings on reading comprehension: a multi-analysis study on Iranian university students. Computer Assisted Language Learning, 1–25. https://doi.org/10.1080/09588221.2025.2491708

Sad-ayan-Lacambra, J. T., & Busbus, S. O. (2022). Language Anxiety for Non-Native Speakers: A Review Paper. International Journal of Linguistics, Literature and Translation, 5(7), 68–72. https://doi.org/10.32996/ijllt.2022.5.7.8

Seref Akın, M. (2025). Psychological Barriers and Growth Mindset in Foreign Language Learning. Forum for Linguistic Studies, 7(12), 1603–1620. https://doi.org/10.30564/fls.v7i12.9455

Vatou, A. (2025). Examining Resilience, Self-Efficacy and Environmental Chaos Relationship in Early Childhood Education and Care Teachers. Psychology International, 7(3), 73. https://doi.org/10.3390/psycholint7030073

Villamin, P., Lopez, V., Thapa, D. K., & Cleary, M. (2025). A Worked Example of Qualitative Descriptive Design: A Step-by-Step Guide for Novice and Early Career Researchers. Journal of Advanced Nursing, 81(8), 5181–5195. https://doi.org/10.1111/jan.16481

Wang, X., Hamat, A. Bin, & Shi, N. L. (2024). Designing a pedagogical framework for mobile-assisted language learning. Heliyon, 10(7), e28102. https://doi.org/10.1016/j.heliyon.2024.e28102