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AI-Mediated Arabic Language Learning: Bridging Linguistic Gaps in Islamic Studies Curriculum

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Abstract
This study addresses the critical challenge of curriculum desynchronization between Arabic language instruction and Islamic Studies (PAI) in Indonesian Senior High Schools (Madrasah Aliyah). While Arabic serves as an essential medium for understanding religious texts, current instructional models often isolate linguistic mechanics from theological content, resulting in intellectual fatigue and reduced student engagement. Grounded in the frameworks of Technological Pedagogical Content Knowledge (TPACK) and the Love-Based Curriculum (Kurikulum Berbasis Cinta / KBC), this research investigates how Artificial Intelligence (AI) can bridge linguistic and conceptual gaps across these disciplines. Utilizing a qualitative case study approach, data were gathered through document analysis of learning standards, classroom observations, and in-depth interviews with educators. The findings demonstrate that AI-mediated learning tools effectively harmonize Arabic grammar with Islamic Studies themes, mitigating cognitive load and fostering a humanistic, empathetic learning environment. Furthermore, this study proposes an interdisciplinary collaborative framework for educators to synchronize language skills with religious comprehension simultaneously. Ultimately, the research highlights AI's transformative potential as a pedagogical mediator in modernizing Islamic secondary education.

Keywords: AI-Mediated Learning, Arabic Language Acquisition, Islamic Studies, Curriculum Synchronization, Love-Based Curriculum

Abstract

Studi ini membahas tantangan kritis desinkronisasi kurikulum antara pengajaran bahasa Arab dan Studi Islam (PAI) di Sekolah Menengah Atas Indonesia (Madrasah Aliyah). Meskipun bahasa Arab berfungsi sebagai media penting untuk memahami teks agama, model pengajaran saat ini sering mengisolasi mekanika linguistik dari konten teologis, sehingga menyebabkan kelelahan intelektual dan keterlibatan siswa berkurang. Berlandaskan kerangka Pengetahuan Pedagogis Teknologi (TPACK) dan Kurikulum Berbasis Cinta (Kurikulum Berbasis Cinta /

KBC), penelitian ini menyelidiki bagaimana Kecerdasan Buatan (AI) dapat menjembatani kesenjangan linguistik dan konseptual di antara disiplin ilmu tersebut. Dengan menggunakan pendekatan studi kasus kualitatif, data dikumpulkan melalui analisis dokumen standar pembelajaran, observasi di kelas, dan wawancara mendalam dengan pendidik. Temuan menunjukkan bahwa alat pembelajaran yang dimediasi AI secara efektif menyelaraskan tata bahasa Arab dengan tema Studi Islam, mengurangi beban kognitif dan menciptakan lingkungan belajar yang humanistik dan empatik. Selain itu, studi ini mengusulkan kerangka kerja kolaboratif interdisipliner bagi para pendidik untuk menyinkronkan keterampilan bahasa dengan pemahaman agama secara bersamaan. Pada akhirnya, penelitian ini menyoroti potensi transformatif AI sebagai mediator pedagogis dalam memodernisasi pendidikan menengah Islam.

Kata kunci: Pembelajaran yang Dimediasi AI, Akuisisi Bahasa Arab, Studi Islam, Sinkronisasi Kurikulum, Kurikulum Berbasis Cinta

INTRODUCTION

In the modern landscape of Islamic secondary education, particularly within Indonesian Madrasah Aliyah, the mastery of the Arabic language serves as an indispensable foundation for comprehending primary religious texts, including the Qur'an, Hadith, and classical Islamic jurisprudence (fiqh). Despite its central role, curriculum restructuring has categorised Arabic as a distinct linguistic discipline separate from Islamic Studies (Pendidikan Agama Islam / PAI), leading to a noticeable instructional dichotomy. In practical classroom settings, students frequently encounter severe curriculum desynchronization, where the grammatical structures (Nahwu-Shorof) and vocabulary (Mufradat) required to comprehend complex religious texts in PAI classes have not been synchronized or taught in Arabic language lessons. Consequently, secondary school learners face intense intellectual fatigue and cognitive overload as they attempt to reconcile these isolated academic domains without structured pedagogical bridges.

To mitigate this disconnect, contemporary educational paradigms advocate for humanistic and transformative approaches, such as the Love-Based Curriculum (Kurikulum Berbasis Cinta/ KBC). Rooted in principles of affection (mahabbah), empathy, and psychological well-being, KBC posits that language acquisition is most effective when learners connect emotionally with the underlying meaning of the texts rather than viewing language learning as a rigid technical requirement. Concurrently, the rapid evolution of Artificial Intelligence in Education (AIED) offers unprecedented opportunities to personalize learning and bridge interdisciplinary gaps. By leveraging AI-mediated tools within the framework of Technological Pedagogical Content Knowledge (TPACK), educators can harmonize linguistic

training with religious content, streamlining cognitive demands and fostering an engaging, empathetic educational ecosystem.

To establish the state of the art in this domain, existing scholarly literature must be thoroughly examined across language learning, religious education, and technology integration. A study by Setiawan and Maslamah (2025) explored the practical implementation of artificial intelligence tools, such as Veed.io, Google Lens, Bing Translator, Canva, and social media platforms, to enhance the four core Arabic language skills (istima', kalam, qira'ah, and kitabah) in MAN 2 Kulon Progo. While their research demonstrated the technical viability of AI in differentiated language learning, it focused strictly on isolated language skill acquisition and did not address the curriculum synchronization between Arabic language instruction and the broader PAI subject cluster.

Further examining digital transformation in language pedagogy, Satrio (2025) conducted a qualitative literature study analyzing the opportunities, challenges, and pedagogical innovations of integrating AI, specifically chatbots and Natural Language Processing (NLP) applications, into Arabic education. Although Satrio highlighted the theoretical potential of AI-driven automated feedback and personalized learning, the study remained conceptual and lacked empirical field evaluation within senior high school madrasahs. Moreover, it omitted any analysis regarding how AI could be utilized to align structural linguistic competency with Islamic theological subjects.

In the realm of Islamic religious instruction, Panjaitan (2025) investigated the deployment of AI tools, including game-based learning platforms and ChatGPT, and their implications for student learning independence among tenth-grade students at SMA N 8 Yogyakarta. Panjaitan's empirical findings confirmed that interactive AI applications significantly enhance learner autonomy in religious studies. However, because the research was conducted within a general public high school (SMA) rather than an Islamic senior high school (Madrasah Aliyah), it did not account for the specialized Arabic linguistic demands inherent in Islamic studies, nor did it examine curriculum alignment across language and theology departments.

From a curriculum framework perspective, historical antecedents such as the study by Mudlofir (2007) investigated the implementation problems of competency-based curricula (KBK) within PAI subjects at MA Darul Ulum Sidoarjo. Mudlofir highlighted critical structural issues including teacher performance, supervisory oversight, and assessment limitations in

managing competency-focused religious education. Nevertheless, conducted during the early 2000s, this research predated the era of artificial intelligence and did not consider technological mediation or cross-subject synchronization between Arabic linguistics and PAI.

Finally, regarding specific language learning difficulties, Pakihun et al. (2021) examined reading (qira'ah) instruction challenges among junior high madrasah (MTs) students, recommending curriculum synchronization between Islamic boarding schools (pesantren) and ministry standards as a potential solution. Although their study explicitly raised the necessity of curriculum harmonization, its focus was restricted to a single skill at the middle school level and addressed institutional curriculum overlapping rather than interdisciplinary alignment between Arabic syntax and PAI theology using modern AI tools.

The scientific novelty of this study lies in its synthesis of three crucial dimensions that have hitherto been investigated only in isolation: the structural synchronization of Arabic language and Islamic Studies (PAI) curricula, the humanistic implementation of the Love-Based Curriculum (*Kurikulum Berbasis Cinta*), and the integration of Artificial Intelligence as an instructional mediator. Unlike previous scholarship that treats AI as a mere technical aid or curriculum alignment as a administrative exercise, this study positions AI as an adaptive catalyst that bridges linguistic gaps while preserving the emotional and spiritual ethos of humanistic Islamic pedagogy.

Based on these contextual challenges and literature gaps, three primary research questions guide this inquiry: (1) To what extent are the learning standards and competencies of Arabic language instruction aligned with the PAI subject cluster in Madrasah Aliyah? (2) How does the internalization of the Love-Based Curriculum framework mitigate student anxiety and cognitive fatigue during Arabic-mediated religious text comprehension? and (3) How can an interdisciplinary collaborative model between Arabic and Islamic Studies educators be formulated using AI technologies to ensure synchronized, non-overlapping instruction?

METHODOLOGY

Accordingly, the ultimate objectives of this study are threefold: first, to systematically analyze and map the intersections between Arabic language learning units and PAI subject matters to minimize curricular desynchronization; second, to evaluate the efficacy of the Love-Based Curriculum as a psychological and pedagogical mechanism for enhancing student engagement in Arab-Islamic literacy; and third, to establish a collaborative AI-assisted framework for

educators to synchronize language skill acquisition and religious comprehension simultaneously.

DISCUSSION

The primary ambition of this empirical investigation was to analyze and evaluate the structural synchronization between Arabic language learning units (Bahasa Arab) and the Islamic Education (Pendidikan Agama Islam / PAI) subject cluster within Indonesian Islamic Senior High Schools (Madrasah Aliyah). Driven by the alarming rate of curriculum desynchronization, intellectual fatigue, and cognitive overload experienced by secondary learners, this study sought to examine how the humanistic paradigm of the Love-Based Curriculum (Kurikulum Berbasis Cinta / KBC) and the technological mediation of Artificial Intelligence (AI) can collectively bridge linguistic, psychological, and pedagogical divides.

The empirical findings from document analyses, observational sessions, and in-depth interviews provide robust evidence that curriculum fragmentation between language acquisition and theological study severely undermines student achievement and engagement. However, when mediated by adaptive AI technologies and anchored in a love-based humanistic philosophy, cross-disciplinary harmonization becomes not only achievable but transformative. The following sections critically contextualize these findings within the broader scientific literature, theoretical frameworks, and practical realities of Islamic secondary education.

Curriculum Desynchronization and Cognitive Load in Dual-Curriculum Madrasahs

The empirical analysis of learning standards, particularly the mapping of Learning Achievements (*Capaian Pembelajaran* / CP) and Basic Competencies (*Kompetency Dasar* / KD), revealed a severe structural desynchronization between Arabic language instruction and the PAI subject cluster (*Al-Qur'an Hadits*, *Fikih*, *Akidah Akhlak*, and *Sejarah Kebudayaan Islam* / SKI). Historically, educational reforms enacted by the Ministry of Religious Affairs (Kemenag) aimed to elevate Arabic to an independent, globally recognized foreign language discipline, mirroring the pedagogical status of English. While regulatory separation strengthened the formal status of Arabic as a distinct linguistic domain, field data indicate that it inadvertently severed the intrinsic connection between Arabic syntax (*Nahwu-Shorof*) and its theological application.

In daily classroom execution, this desynchronization manifests as a temporal and thematic misalignment. For instance, when tenth-grade students are introduced to complex jurisprudence (fiqh) topics regarding contractual law (Muamalah) in PAI classes, they are expected to navigate classical Arabic textual excerpts containing sophisticated passive voice constructions (Fi'il Madhi Majhul) and intricate possessive phrases (Idhafah). However, the corresponding Arabic language syllabus during the same academic term focuses strictly on basic conversational themes such as "Greetings and Self-Introduction" (At-Ta'aruf) or "School Environment" (Al-Bi'ah Al-Madrasiyah). Consequently, Arabic language teachers treat grammar as an isolated, mechanical exercise in sentence formation, while PAI educators assume students possess syntactic fluency that has never been formally cultivated in their language courses.

This empirical finding directly mirrors the theoretical concerns raised by Beane (1997) regarding curriculum fragmentation. When academic disciplines are strictly compartmentalized, learners are deprived of the opportunity to construct meaningful connections across related fields of knowledge. In the context of Madrasah Aliyah, this breakdown is particularly detrimental because Arabic is not merely a subject of study; it is the cognitive vehicle required to process theological content. The present findings extend the previous work of Pakihun et al. (2021), who identified similar reading (qira'ah) comprehension difficulties among junior high madrasah (MTs) learners due to overlapping curricula between traditional boarding schools (pesantren) and state ministry guidelines. While Pakihun et al. restricted their observation to lower secondary reading mechanics, our findings demonstrate that curriculum desynchronization persists at the senior secondary level across all linguistic domains (istima', kalam, qira'ah, and kitabah), creating a systemic barrier to higher-order theological reasoning.

Cognitive Load Theory and Student Intellectual Fatigue

The consequences of this curricular mismatch are best illuminated through John Sweller's Cognitive Load Theory (Sweller, 1988). When students encounter classical religious texts in PAI classes without prior syntactic scaffolding from their Arabic classes, their working memory is subjected to extreme **extraneous cognitive load**. Learners are forced to expend vast amounts of mental capacity attempting to decode unfamiliar vocabulary (*Mufradat*) and decipher complex grammatical structures simultaneously. As a result, very little working memory capacity remains available for **germane cognitive load**—the working

memory devoted to processing, integrating, and internalizing the actual theological, moral, or philosophical meanings of the religious text.

Observational data and interviews with Madrasah Aliyah students confirmed that this sustained cognitive overload triggers severe intellectual fatigue, academic anxiety, and learned helplessness. Students reported feeling overwhelmed by what they perceived as a "double burden": mastering foreign grammatical rules in isolation during Arabic class, while simultaneously being judged on their religious comprehension in PAI class. Rather than fostering a deep, spiritual connection to Islamic literacy, this instructional dissonance transforms both Arabic and PAI into sources of academic strain.

These empirical insights validate and elaborate upon the work of Mudlofir (2007), who investigated implementation problems within competency-based religious curricula. Mudlofir documented widespread teacher frustration and assessment inefficiencies resulting from rigid competency requirements. Our study builds upon Mudlofir's foundation by demonstrating that the root cause of student underperformance in religious competency is not inherently the complexity of theological concepts, but rather the unmitigated cognitive load imposed by unaligned language instruction. When language skills and theological content are taught without synchronized scaffolding, the educational ecosystem inadvertently penalizes students for systemic curricular failures.

The Love-Based Curriculum (KBC) as a Humanistic and Psychological Solution

To counter the intellectual fatigue caused by rigid curriculum structures, the implementation of the Love-Based Curriculum (*Kurikulum Berbasis Cinta* / KBC) introduces a vital humanistic dimension to Islamic secondary education. Grounded in the principles of affection (*mahabbah*), empathy, mutual respect, and spiritual care (*rahmah*), KBC shifts the instructional focus from coercive compliance to emotional engagement. The qualitative findings of this study demonstrate that internalizing KBC principles directly mitigates the psychological distress and language anxiety (*qira'ah anxiety*) that typically accompany Arabic language acquisition.

In traditional madrasah settings, Arabic instruction has frequently suffered from a hyper-fixation on grammatical perfectionism. Students who fail to apply proper case endings (I'rab) are often subjected to immediate public correction, which instills a fear of making

mistakes and induces cognitive freezing. Under the KBC framework, language acquisition is recontextualized. Educators prioritize emotional safety, encouraging students to view errors not as academic failures, but as natural stepping stones toward spiritual and intellectual growth. Teachers employ empathetic communication, validating students' struggles with foreign syntactic structures and explicitly connecting language exercises to core humanistic values.

This empirical evidence resonates deeply with humanistic educational theories (such as those of Carl Rogers) and modern psycholinguistic approaches to second language acquisition. By addressing the affective filter—a concept central to Krashen's language acquisition theory—KBC effectively lowers students' emotional defenses, allowing linguistic input to be processed more effectively. The data indicate that when students feel emotionally supported and valued by their instructors, their willingness to communicate in Arabic and engage with complex PAI texts increases dramatically.

Traditional Instructional Approach	**Love-Based Curriculum (KBC) Approach**
Primary Focus: Grammatical perfectionism (*I'rab*)	Primary Focus: Emotional connection & textual meaning
Error Handling: Immediate, public corrective feedback	Error Handling: Empathetic, formative, growth-oriented guidance
Student Mindset: Fear of academic failure & cognitive freezing	Student Mindset: Psychological safety & willingness to communicate
Pedagogical Goal: Coercive compliance with rules	Pedagogical Goal: Transformative, spiritual, & affective engagement

Table 1. Traditional Instructional Approach Love-Based Curriculum (KBC) Approach

A central finding of this research is that language learning becomes exponentially more effective when it transitions from a technical-instructional mandate to a transformative-emotional experience. Under KBC, Arabic is no longer presented as a dry, foreign grammatical

system that must be memorized for national examinations. Instead, it is reframed as an act of devotion and a direct medium for connecting with divine wisdom, historical narratives, and ethical values.

When students recognize that mastering a specific syntactic structure directly unlocks the rich, emotional narrative of an Islamic history (SKI) lesson or the moral beauty of a prophetic tradition (Hadith), their intrinsic motivation soars. Interview responses from tenth and eleventh-grade learners revealed a profound shift in mindset: students described feeling a sense of spiritual pride and affection (mahabbah) when they successfully decoded a religious text independently. This emotional connection alters the learner's perception of cognitive effort; hard work is no longer experienced as draining intellectual fatigue, but rather as meaningful, rewarding exploration.

This transformative shift provides empirical confirmation of the theoretical assertions made by Afryansyah & Sirozi (2025) and Nugraha et al. (2025) regarding the impact of KBC in religious institutions. Furthermore, these findings extend the work of Setiawan and Maslamah (2025). While Setiawan and Maslamah demonstrated that technological tools could enhance student interest in Arabic language mechanics at MAN 2 Kulon Progo, their study lacked a unifying pedagogical philosophy, leaving technology as a purely technical intervention. The current study proves that technology alone is insufficient; when AI integration is anchored within the humanistic, affection-driven framework of KBC, technical efficiency is infused with emotional and moral purpose, producing holistic student engagement that transcends rote skill acquisition.

AI as a Pedagogical Mediator for Curriculum Alignment

While the Love-Based Curriculum provides the necessary psychological and affective foundation, Artificial Intelligence serves as the operational engine that makes technical curriculum synchronization feasible in real time. Integrating AI into the instructional design of *Madrasah Aliyah* requires an expansion of the Technological Pedagogical Content Knowledge (TPACK) framework (Mishra & Koehler, 2006) and the principles of Artificial Intelligence in Education (AIED) (Holmes et al., 2019).

In traditional TPACK models, technology is often treated as an external tool used to deliver content or facilitate classroom activities (e.g., presentation slides or online quizzes).

However, in the context of cross-disciplinary synchronization between Arabic and PAI, AI functions as an active pedagogical mediator. AI algorithms operate at the complex intersection of Arabic Linguistic Knowledge, Islamic Theological Content, and Adaptive Pedagogical Strategies.

Through Natural Language Processing (NLP), Large Language Models (LLMs), and automated text-analysis tools, AI systems can process vast volumes of religious literature and Arabic language learning materials simultaneously. The empirical data collected from classroom interventions show that generative AI platforms can instantly analyze a specific PAI unit—such as a chapter on Islamic economics in Fikih—and automatically extract the key vocabulary, morphological patterns (Shorof), and grammatical structures (Nahwu) embedded within those specific theological passages. The AI then generates customized Arabic language exercises, reading passages, and dialogue drills that match the exact grammatical competency level of the students while utilizing the exact thematic content of their upcoming PAI lessons.

This technological capability fundamentally redefines how curriculum synchronization occurs. Historically, cross-subject alignment required months of tedious manual mapping by curriculum committees—a process that rarely translated into daily classroom reality due to time constraints and heavy teaching loads. AI reduces this administrative friction to seconds, allowing educators to create dynamically aligned learning materials effortlessly.

Scaffolding, Differentiated Instruction, and Automated Feedback

Beyond macro-level curriculum alignment, AI-mediated tools provide indispensable micro-level scaffolding for individual learners. In accordance with Lev Vygotsky's Zone of Proximal Development (ZPD) and Social Development Theory (Vygotsky, 1978), effective learning occurs when students are supported by a "More Knowledgeable Other" (MKO) to perform tasks just beyond their independent capability. In a crowded madrasah classroom, a single teacher cannot provide continuous, personalized scaffolding to thirty or forty students with varying levels of language proficiency. AI acts as an omnipresent, adaptive MKO.

During observational sessions, students utilized AI-powered reading assistants equipped with optical character recognition (OCR) and context-aware morphological analysis. When encountering a challenging classical text in PAI, students could highlight unfamiliar terms to receive instant, multi-layered scaffolding: Linguistic Layer: Root-word extraction,

morphological b; eakdown, and contextual translation. Grammatical Layer: Syntactic role analysis (*I'rab*) simplified into clear, color-coded visual diagrams. Theological Layer: Concise, age-appropriate thematic explanations linked to their PAI textbook modules.

This instant, multi-layered assistance significantly reduces extraneous cognitive load, enabling students to comprehend complex texts without experiencing mental freeze. Furthermore, AI platforms provide real-time, formative feedback on student writing (*kitabah*) and reading pronunciation (*qira'ah*). Rather than waiting days for a teacher to mark an assignment, students receive immediate, non-judgmental corrections accompanied by encouraging, love-based explanations.

These empirical observations provide concrete field validation for the conceptual claims made by Satrio (2025). While Satrio hypothesized that NLP and chatbots possessed theoretical utility for Arabic education, his literature-based study lacked empirical evidence from active madrasah classrooms. Our findings bridge this gap, demonstrating precisely how AI tools translate theoretical potential into measurable classroom success. Furthermore, our findings build upon the research of Panjaitan (2025), who documented that AI tools enhanced student learning independence in PAI classes at SMA N 8 Yogyakarta. While Panjaitan observed increased autonomy in general high school religious studies, our study demonstrates that in a Madrasah Aliyah environment, AI-driven independence is directly tied to the tool's ability to dismantle complex linguistic barriers, thereby allowing students to master both language mechanics and religious content concurrently.

The Interdisciplinary Collaborative Framework for Arabic and PAI Educators

A critical barrier to curriculum integration identified in this research is the entrenched organizational and intellectual rivalry, often referred to as "institutional silos", between language faculties and religious studies faculties. In many *Madrasah Aliyah* institutions, Arabic teachers view themselves as language specialists responsible for linguistic precision, while PAI teachers operate as theologians focused on doctrinal understanding. Communication between these two groups of educators is traditionally limited to administrative meetings, with virtually no joint instructional planning or cross-subject lesson design.

The empirical data reveal that unaligned instruction is rarely intentional; rather, it is a byproduct of heavy teaching loads, rigid subject-specific assessment requirements, and a lack

of collaborative structures. PAI teachers frequently report that they lack the psycholinguistic tools to teach grammar effectively when students struggle with a text, while Arabic teachers confess that they lack clarity regarding the specific theological topics being taught in PAI classrooms month by month.

To dismantle these silos, this study formulates and tests a operational **Interdisciplinary Collaborative Framework**. This framework establishes a structured, bi-weekly co-planning protocol between Arabic and PAI educators, facilitated by educational technology specialists. By engaging in joint curriculum mapping, educators transition from isolated practitioners to a unified community of practice.

Operationalizing the Collaborative AI Integration Model

The operational execution of this collaborative model relies on a three-phase workflow designed to ensure synchronized, non-overlapping instruction:

At the beginning of each instructional cycle, PAI teachers submit their upcoming thematic topics (e.g., *Akidah Akhlak* module on "Ethics of Environmental Stewardship") to the collaborative hub. Concurrently, Arabic teachers input their required grammatical competencies (e.g., "Relative Pronouns" / *Isim Maushul* and "Adjectival Phrases" / *Sifat-Mausuf*).

Phase 2: AI-Mediated Material Synthesis (The Processing Phase)

Using fine-tuned generative AI prompts and educational text-generation platforms, the team inputs both sets of requirements. The AI tool synthesizes these inputs, outputting reading texts, vocabulary lists, and syntactic exercises that utilize primary religious source materials (Qur'anic verses, Hadiths, and ethical stories related to the environment) to teach the specific target grammatical structures.

Phase 3: Synchronized Classroom Execution & Joint Assessment (The Output Phase)

Instruction is executed in a mutually reinforcing sequence. In Arabic class, students master the vocabulary and grammatical rules using the environment-themed Islamic texts. Later that week, when students enter their *Akidah Akhlak* class, they encounter those exact same texts and vocabulary, allowing them to skip basic linguistic decoding and immediately engage in

deep theological discussion and ethical reflection. Furthermore, educators utilize joint assessment rubrics, where a single student essay or project is evaluated by the Arabic teacher for linguistic accuracy and by the PAI teacher for theological depth.

This collaborative model directly addresses the structural limitations highlighted in historical curriculum studies. Unlike Mudlofir (2007), who observed that competency-based reforms faltered due to isolated teacher performance and poor supervisory mechanisms, our framework embeds structural collaboration into the digital workflow of the school. By leveraging AI to handle the heavy burden of material adaptation, joint planning becomes time-efficient and sustainable for teachers. This interdisciplinary approach transforms the educational experience from a fragmented series of subjects into a cohesive, holistic journey of Islamic literacy and spiritual growth.

Synthesis and Comparative Analysis with State-of-the-Art Literature

To clearly define the scientific novelty and theoretical contribution of this study, it is essential to synthesize our empirical findings alongside the five benchmark studies that constituted the state of the art in recent literature. While previous scholarship has examined isolated components of educational technology, language pedagogy, and curriculum implementation, none have achieved the tripartite synthesis demonstrated in this investigation.

The comparative matrix below details how the present research builds upon, differentiates from, and advances prior scholarship across key analytical dimensions:

Analytical Dimens ion	**Setiawan & Maslamah (2025)**	**Satrio (2025)**	**Panjaitan (2025)**	**Mudlofir (2007/200 8)**	**Pakihun et al. (2021)**	**Present Study (2026)**
Primary Focus	Technical AI tools in Arabic skills (*MAN 2 Kulon Progo*)	Conceptual literatur e review on AI & NLP in Arabic	AI tools & student autonom y in PAI (*SMA N 8 Yk*)	Implementation problems of KBK in PAI	Reading (*qira'ah*) difficulties in Junior high (*MTs*)	BA–PAI Curriculum Synchroniz ation via AI & KBC
Instituti onal Context	*Madrasah Aliyah*	General / Conceptual	General High School (*SMA*)	*Madrasah Aliyah*	Junior High (*MTs*) & *Pesantren*	Senior High Madrasah (*Madrasah Aliyah*)

Cross-Subject Integrat ion	Isolated to Arabic language class	None (Langu age only)	None (PAI only)	None (PAI only)	Limited to Pesantren vs. Kemenag overlaps	Systemic BA–PAI Interdisciplina ry Synchroniz ation
Humanistic/ Affective Framework	Differentiate d learning (Technical)	None	Learner independen ce	None	None	Love-Based Curriculum (*Kurikulum Berbasis Cinta*/ KBC)
Role of AI Technology	Technical supplementar y tool	Theoretic al/ Conceptu al framewor k	Interactive learningaid	Absent (Pre-AI era)	Absent	Pedagogical Mediator & Collaborative Scaffolding Engine
Pedagogical Outcome	Isolated skill enhancement	Theoretic al model proposal	Student self-reliance in religion	Documentation of structural friction	Remediation of basic reading errors	Reduced Cognitive Load, Dual Competency, & Holistic Engagement

Table 2. The comparative matrix below details how the present research builds upon, differentiates from, and advances prior scholarship across key analytical dimensions

Distinguishing Technical AI Utility from Systemic Pedagogical Mediation

A comparative evaluation highlights a fundamental theoretical distinction between prior technology studies and the current research. Setiawan and Maslamah (2025) provided valuable baseline evidence regarding the technical utility of tools like Google Lens, Bing Translator, and Canva in Arabic classrooms. However, their intervention remained confined within the traditional boundaries of the Arabic department. Technology was used to teach Arabic *for the sake of Arabic*. Similarly, Satrio (2025) offered an excellent theoretical overview of NLP and chatbot capabilities but failed to ground these technologies in empirical field realities or cross-curricular applications.

In contrast, our study elevates AI from a supplementary presentation tool to a **systemic pedagogical mediator**. By utilizing AI to analyze, align, and synthesize content across subject boundaries, technology directly addresses the root cause of student learning failure: curriculum desynchronization. Furthermore, while Panjaitan (2025) demonstrated that AI enhances student autonomy in general high school religious education, her findings cannot be directly applied to the madrasah system without accounting for Arabic linguistic barriers. Our research fills this crucial gap, showing that AI fosters true learning independence in madrasahs precisely because it dismantles the linguistic anxiety that prevents students from engaging with original Islamic sources.

Evolving Curriculum Realities: From Rigid KBK to Humanistic KBC Synthesis

From a curriculum evolution perspective, comparing our findings with the historical work of Mudlofir (2007) and Pakihun et al. (2021) illustrates a major paradigm shift in Indonesian Islamic education. Mudlofir documented the structural struggles of implementing early Competency-Based Curricula (KBK), showing how top-down mandates generated administrative burnout and superficial compliance. Pakihun et al. (2021) confirmed that structural mismatches between different educational authorities continued to harm student reading capabilities over a decade later.

Our study demonstrates that modern curriculum reform must transcend structural mechanics by incorporating humanistic, affective dimensions. The Love-Based Curriculum (KBC) fills the emotional void present in earlier competency-based frameworks. However, KBC alone could easily become another idealistic mandate if teachers are not provided with practical tools to implement it. By synthesizing KBC with AI-mediated interdisciplinary collaboration, this study provides a realistic, scalable model for modern madrasah education. Cognitive load is reduced, language anxiety is dissolved through empathetic pedagogy, and curriculum synchronization is achieved seamlessly through technological mediation.

CONCLUSION

This empirical investigation addressed the critical challenge of curriculum desynchronization between Arabic language instruction (*Bahasa Arab*) and the Islamic Education (*Pendidikan Agama Islam*/ PAI) subject cluster within Indonesian Senior High Schools (*Madrasah Aliyah*).

Through a qualitative case study design utilizing document analysis, classroom observations, and in-depth interviews, the study investigated how the humanistic paradigm of the Love-Based Curriculum (*Kurikulum Berbasis Cinta* / KBC) and the technological mediation of Artificial Intelligence (AI) can collectively bridge linguistic, psychological, and pedagogical divides.

The empirical findings yield three foundational insights into the modernization of Islamic secondary education. First, document analysis of learning standards confirmed a profound structural dichotomy between Arabic linguistics and theological subjects. While regulatory reforms successfully elevated Arabic to an independent foreign language discipline, they inadvertently severed its functional alignment with PAI subject clusters. In practice, students face severe temporal and thematic mismatches where the syntactic structures required to comprehend religious texts in PAI classes are not synchronized with their Arabic language syllabus. According to Cognitive Load Theory, this structural disconnect subjects learners to extreme extraneous cognitive load, resulting in intellectual fatigue, academic anxiety, and learned helplessness.

Second, internalizing the principles of KBC—rooted in affection (*mahabbah*), empathy, and spiritual care (*rahmah*)—serves as an essential psychological and affective mechanism to mitigate this distress. By shifting classroom dynamics away from rigid grammatical perfectionism toward emotional safety and textual meaning, KBC significantly de-escalates language anxiety. When Arabic acquisition transitions from a coercive technical requirement to a transformative-emotional experience, students develop intrinsic motivation and a deeper spiritual connection to Islamic literacy.

Third, within the Technological Pedagogical Content Knowledge (TPACK) and Artificial Intelligence in Education (AIED) frameworks, AI acts as a dynamic mediator that operationalizes curriculum synchronization. AI-powered tools provide real-time scaffolding within Vygotsky's Zone of Proximal Development, automatically extracting target vocabulary and morphological patterns from PAI modules to generate parallel Arabic language drills. Furthermore, AI reduces administrative friction, enabling an interdisciplinary collaborative framework where Arabic and PAI educators co-plan, align learning objectives, and execute non-overlapping, mutually reinforcing instruction.

This research makes several significant theoretical and methodological contributions to scholarly literature across educational technology, curriculum theory, and Islamic pedagogy. By mapping the structural intersections between Arabic linguistics and Islamic theology, this study demonstrates that foreign language acquisition in religious institutions cannot be treated in isolation, offering a practical model for operationalizing integrated curriculum theory within secondary religious education. While previous scholarship frequently treats AI as a purely technical tool or views curriculum alignment as an administrative task, this research achieves a novel tripartite synthesis. It demonstrates that AI technology achieves its highest pedagogical efficacy when embedded within a humanistic, love-based philosophy, where technology provides operational speed and technical precision while KBC infuses the process with emotional empathy and spiritual purpose. Additionally, this research expands the traditional TPACK framework by positioning AI not merely as a presentation medium, but as an active interdisciplinary bridge that synthesizes content knowledge across separate academic departments in real time.

The findings offer clear, actionable implications for key stakeholders in Islamic education. For educational policymakers within the Ministry of Religious Affairs (Kemenag), future curriculum guidelines should officially mandate cross-disciplinary mapping between foreign language subjects and religious subject clusters, embedding standardized alignment matrices directly into national madrasah curriculum guides. For madrasah administrators and principals, school leadership must dismantle departmental silos by establishing institutional structures for interdisciplinary collaboration, allocating dedicated, scheduled co-planning time for Arabic and PAI teaching faculties, and investing in professional development programs focused on AI-assisted lesson design. For classroom educators, Arabic and PAI teachers should adopt collaborative AI workflows to streamline material adaptation while cultivating low-anxiety, affection-centered learning environments that prioritize student engagement, growth-oriented feedback, and deep textual comprehension over punitive error correction.

While this investigation provides robust qualitative insights, several limitations highlight valuable avenues for future research horizons. Future studies should complement these qualitative findings with large-scale quantitative or experimental designs, such as randomized control trials, to measure the precise impact of AI-mediated KBC instruction on standardized language proficiency scores and theological retention rates. Furthermore, research

should be expanded beyond state *Madrasah Aliyah* institutions to include traditional Islamic boarding schools (*Pesantren*), private madrasahs, and international Islamic schools to evaluate the model's adaptability across diverse institutional cultures and technological infrastructures. Finally, further technological development is needed to fine-tune specialized Large Language Models trained specifically on classical Islamic texts (*Kitab Kuning*), ensuring that automated linguistic scaffolding maintains absolute doctrinal precision and nuanced morphological accuracy. Ultimately, the integration of Artificial Intelligence and the Love-Based Curriculum offers a transformative pathway for modernizing Islamic secondary education, ensuring that Arabic is no longer perceived as a daunting academic hurdle, but as an accessible, empowering vehicle for deep spiritual understanding and intellectual growth

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