

DEVELOPING A HOLISTIC EDUCATION PARADIGM: THE SYNERGY OF LOVE-BASED CURRICULUM (KBC) AND AI & CODING LEARNING

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Abstract

The rapid evolution of Artificial Intelligence (AI) and programming (coding) necessitates an innovative response from the educational sector to foster a generation that is not only digitally competent but also possesses strong character and ethics. This paper proposes a conceptual model to develop a holistic educational paradigm through the synergy between the Love-Based Curriculum (Kurikulum Berbasis Cinta or KBC) and AI & coding education within the *madrasah* environment. The objective is to bridge the gap between technological advancement and humanitarian values by establishing KBC as the ethical foundation for the development and utilization of technology. The methodology employed involves a literature analysis and synthesis to integrate the philosophical foundations of KBC, namely ontology, epistemology, and axiology, with the principles of AI ethics. The resulting model focuses on applying "Panca Cinta" (Five Loves) as an ethical framework for AI and coding projects, wherein students learn to create technological solutions that are humanistic, tolerant, and sustainable. The primary contribution of this paper is to offer a theoretical framework that serves as a basis for future empirical research and policy formulation by the Ministry of Religious Affairs of the Republic of Indonesia (Kemenag). Consequently, *madrasahs* can act as pioneers in cultivating a superior generation that is not only digitally proficient but also empathetic, compassionate, and socially responsible in the global era.

Keywords: Love-based curriculum, AI & coding learning, holistic educational paradigm, *madrasah*, synergy.

INTRODUCTION

The advent of the Fourth Industrial Revolution (Industry 4.0) and Society 5.0 has driven fundamental changes across various sectors, including education¹. This era is characterized by the dominance of intelligent technologies, such as Artificial Intelligence (AI) and coding, which not only automate tasks but also transform how humans interact, think, and solve problems. In the global context, the demands on educational systems have shifted from the mere mastery of factual knowledge to the development of 21st-century skills, including digital literacy, critical thinking,

¹ Elayyan, S. (2021). *The future of education according to the fourth industrial revolution*. Journal of Educational Technology and Online Learning, 4(1), 23-30. <https://doi.org/10.31681/jetol.737193>

creativity, and high adaptability. Consequently, curriculum innovation has become an imperative to ensure educational relevance and sustainability. On a national scale, Indonesia aspires to realize the "Golden Indonesia 2045" vision: becoming a developed nation with superior human resources characterized by global competitiveness and integrity. This vision relies heavily on the quality of education to cultivate a generation that is not only intellectually intelligent but also possesses robust character². The Indonesian government, through the Ministry of Primary and Secondary Education (Kemendikdasmen), has emphasized the importance of integrating AI and coding into the national curriculum. However, this endeavor frequently encounters serious challenges regarding ethics and humanism. AI and coding instruction that focuses solely on technical aspects, without a strong moral foundation, risks creating a generation capable of developing technology yet negligent of social impacts, algorithmic bias, and increasingly complex issues of dehumanization. This phenomenon presents a dilemma: how education can embrace technological advancement without compromising noble humanitarian values.

This dilemma is particularly relevant to *madrasah* education. Traditionally, *madrasahs* are recognized as institutions that excel in shaping students' character and spiritual morals, specifically within Islamic values. However, challenges arise as *madrasahs* face demands to adopt digital technology. There is a concern that a focus on AI and coding might displace the *madrasah* identity, which is rooted in religious values. Conversely, neglecting technological education would position *madrasahs* on the periphery of global competition. Furthermore, reality indicates that *madrasahs*, like other educational institutions, still face issues detrimental to humanitarian values, such as bullying and violence³, as well as intolerance⁴. These issues underscore the need to reinforce existing character education with a more comprehensive approach relevant to contemporary challenges. To address these challenges, the Ministry of Religious Affairs of the Republic of Indonesia (Kemenag) has taken a strategic step by introducing the Love-Based Curriculum (Kurikulum Berbasis Cinta or KBC). KBC represents a holistic educational paradigm grounded in the values of compassion and care. This curriculum is built upon strong philosophical foundations: ontology, epistemology, and axiology. Ontologically, KBC views reality as a unified whole in which God, humanity, and the universe are interconnected through the mechanism of sympathy, or love. This perspective positions humanism, tolerance, and environmental care as fundamental life principles. Epistemologically, KBC encourages experiential and deep learning, in which knowledge is not merely accumulated but internalized as part of cosmic unity. Finally, axiologically, KBC emphasizes the importance of ethics and noble character as tangible manifestations of love in every action⁵.

The Love-Based Curriculum (KBC), with its five core themes known as "Panca Cinta" (Five Loves), Love for God and the Prophet, Love for Knowledge, Love for the Environment, Love for Self and Fellow Humans, and Love for the Homeland, offers a solid foundation for instilling superior

² Rusman, S., dkk. (2021). *Naskah Akademik Kurikulum Nasional/Kurikulum Merdeka*. Badan Penelitian dan Pengembangan. Pusat Kurikulum dan Pembelajaran. Kementerian Pendidikan dan Kebudayaan, Riset, dan Teknologi (Standar et al., n.d.)

³ Voa Indonesia. (2024, Oktober 07). *Voa Indonesia*. (F. Wardah, Editor) Retrieved Agustus 11, 2025, from Voa Indonesia: <https://www.voaindonesia.com/a/kekerasan-di-sekolahmelonjak-fsgi-perlu-ada-screening-terhadap-guru-secara-berkala/7812274.html>

⁴ Anam, C., & Supriyono. (2021). *Peran Guru dalam Inovasi Pembelajaran untuk Menyiapkan Generasi Emas*. *Jurnal Pendidikan dan Inovasi Pembelajaran*, 1(2), 112–125. <https://journal.uny.ac.id/index.php/jpip/article/view/12345>

⁵ (Madrakah, n.d.) Keputusan Direktur Jenderal Pendidikan Islam Nomor 6077 Tahun 2025 tentang *Panduan Kurikulum Berbasis Cinta*. (2025). Kementerian Agama Republik Indonesia

character. However, the potential of KBC extends beyond traditional character education. This paper argues that KBC serves as an ideal bedrock for integrating AI and coding instruction. KBC can function as an ethical compass, providing direction and a noble purpose for technological development and application. Rather than viewing AI and coding as threats, this conceptual model perceives them as tools to realize KBC values. For instance, "Love for the Environment" can be implemented through coding projects that solve ecological problems, while "Love for Self and Fellow Humans" can be realized through the development of fair, non-discriminatory applications. This integration fosters "digital empathy," a concept where students utilize technological skills to create human-centric solutions that uphold values of compassion.

Despite the substantial potential for synergy between KBC and AI & coding instruction, no conceptual model systematically integrates these two elements. Existing curricula tend to separate character education from technological education. Therefore, this research is crucial and urgent. The problem addressed is the absence of a structured theoretical framework to guide this integration. This study aims to formulate a conceptual model to guide *madrasahs* in implementing holistic education that integrates digital intelligence with character maturity. The primary contribution of this paper is to provide a theoretical framework that serves as a scientific and strategic reference for the Ministry of Religious Affairs. It is expected that the findings of this paper will form the basis for further empirical research, the development of learning modules, and policy formulation that will position *madrasahs* at the forefront of cultivating a future generation ready to face global challenges with digital competence and a heart full of love.

RESEARCH METHODS

This research adopts a qualitative conceptual study design to construct a theoretical model. Consistent to synergize the Love-Based Curriculum (KBC) with AI and coding instruction, this approach is highly relevant; it prioritizes the critical analysis and synthesis of existing literature over field-based empirical data collection⁶. This method allows for the identification of conceptual gaps, the development of coherent theoretical arguments, and the proposal of a novel framework to address the identified issues⁷.

The procedural framework of this study was initiated through data collection sourced exclusively from credible literature, rather than field observations or interviews. The primary data sources included official policy documents from the Ministry of Religious Affairs of the Republic of Indonesia, notably the Decree of the Director General of Islamic Education Number 6077 of 2025 regarding the Love-Based Curriculum Guidelines, as well as academic journals, books, and research reports. These sources were selected based on their relevance to: (1) the philosophy of Islamic education and *madrasah* curricula; (2) AI ethics; (3) pedagogical approaches to AI and coding; and (4) established curriculum development theories, including those by Saylor & Alexander (1966) and Zais (1976). Additionally, the study drew upon literature pertaining to character education in the digital age and the unique challenges faced by *madrasah* institutions.

The data analysis employed a dual approach of conceptual analysis and synthesis. Initially, the philosophy and tenets of KBC were deconstructed to isolate core components: ontology, epistemology, axiology, and the *Panca Cinta*. Subsequently, literature on AI and coding was scrutinized to determine critical pedagogical and ethical principles. In the third phase, a synthesis was performed by establishing logical linkages between these two frameworks. This involved exploring,

⁶ Schubert, W. H. (1986). *Curriculum: Perspective, Paradigm, and Possibility*. Macmillan Publishing Company. (Schubert, 1986)

⁷ Sowell, E. J. (2005). *Curriculum: An Integrative Introduction*. Prentice Hall. (Sowell, 1996)

for example, how the KBC principle of *tawaazun* (balance) could underpin the development of fair AI algorithms, or how "Love for the Environment" translates into a moral obligation to engineer sustainable technologies. This systematic and iterative process was designed to ensure the conceptual validity of the resulting model, aiming to produce a coherent, holistically integrated framework. Consequently, this study delivers a structured theoretical model intended to guide future empirical inquiries and assist *madrasah* stakeholders in practical application.

RESEARCH RESULTS AND DISCUSSION

Drawing upon the conceptual analysis and synthesis of literature, this research establishes a theoretical model that synergizes the Love-Based Curriculum (KBC) with AI and coding education. The model aims to actualize a holistic educational paradigm in *madrasahs*, fostering the concurrent development of digital proficiency and character maturity. It consists of three core components: (1) The Philosophical Framework of the Integrated Model; (2) The Integrated Curriculum Design; and (3) The Active and Project-Based Learning Model.

1. Philosophical Framework of the Integrated Model

The model is anchored in the three philosophical pillars of KBC, recontextualized to address the technological domain. This framework serves as an ethical compass, governing every phase of AI and coding pedagogy. The dynamic relationship between these philosophical pillars is illustrated in Figure 1.

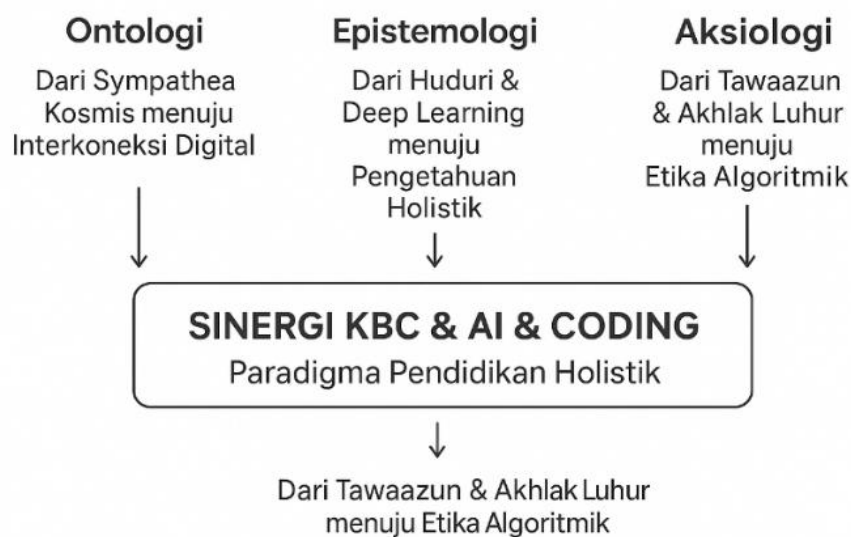


Figure 1. Diagram of the Three Integrated Philosophical Pillars of KBC

- a. **Ontology:** From Cosmic Sympathea to Digital Interconnectedness. Ontologically, KBC regards reality as a cohesive unity bound by love (*sympathea*). This proposed model extends this paradigm into the digital domain, positing that data, code, and algorithms are components of a broader interconnected ecosystem. Consequently, students learn to perceive AI not simply as an instrumental tool but as an entity deeply embedded within and mutually shaping the social, economic, and environmental order. This realization fosters a deep sense of accountability, reinforcing the understanding that every single line of code bears real-world consequences

- b. Epistemology: From Huduri and Deep Learning to Holistic Knowledge. Epistemologically, KBC prioritizes presential knowledge (*huduri*) and deep conceptual understanding. Within the AI framework, this stance challenges the reductionist view that technical knowledge is the exclusive goal of education. Conversely, it advocates for a holistic comprehension of AI, prompting students to interrogate the technology: beyond mastering the mechanics of an algorithm (how), they must critically evaluate its purpose (why), its beneficiaries (for whom), and its ethical consequences (what). Thus, education extends beyond the classroom via tangible projects that fuse technical skills with social and ethical consciousness.
- c. Axiology: From Tawaazun and Moral Virtue to Algorithmic Ethics. Axiologically, KBC champions the tenets of *tawaazun* (equilibrium) and moral virtue. Within this proposed framework, these tenets constitute the bedrock of algorithmic ethics. This perspective compels students to engineer AI solutions characterized by fairness, transparency, and non-discrimination. It instills the understanding that true technological advancement harmonizes technical efficiency with universal well-being, strictly eschewing data exploitation or the marginalization of vulnerable populations.

2. Integrated Curriculum Design: *Panca Cinta* as the Ethical Bedrock of AI

Central to this model is the integration of *Panca Cinta* (the five major tenets of KBC) as the ethical framework for AI and coding pedagogy. In this design, each KBC topic functions as a thematic domain that directs students' technological endeavors. Table 1 elucidates the synergy between the two curricula.

Table 1. Integration Framework for Love-Based Curriculum and AI & Coding Learning

No	Love-Based Curriculum (KBC) Topics	AI & Coding Learning Objectives	Example Learning Projects
1	Love for God and the Prophet	<ul style="list-style-type: none"> - Comprehending AI as a manifestation of divine creation. - Developing AI grounded in the principle of <i>rahmatan lil alamin</i> (a mercy to all worlds). 	<ul style="list-style-type: none"> - Interactive AI-powered prayer (<i>Dua</i>) and <i>Dhikr</i> applications. - AI model development for classifying positive Islamic content
2	Love for Knowledge	<ul style="list-style-type: none"> - Utilizing AI as a tool for critical reasoning and innovation - Mastering coding to solve complex problems 	<ul style="list-style-type: none"> - Data analytics projects to identify socio-religious trends - Development of simple programs to simulate natural phenomena.

3	Love for the Environment	Creating sustainable and eco-friendly technological solutions.	<ul style="list-style-type: none"> - Development of IoT-based sensors to monitor air/water quality within the <i>madrasah</i> environment - Coding applications for waste recycling management.
5	Love for Self and Fellow Humans	<ul style="list-style-type: none"> - Developing human-centric, fair, and non-discriminatory technology - Mitigating algorithmic bias. 	<ul style="list-style-type: none"> - AI-powered chatbot applications to support student mental health - Development of digital platforms for anti-bullying campaigns.
6	Love for the Homeland	Building technology that contributes to national progress and preserves local culture.	<ul style="list-style-type: none"> - Local language dictionary application projects. - Web or app development to promote tourism or local MSME (Micro, Small, and Medium Enterprises) products.

3. Project-Based Learning Model

To operationalize the integrated curriculum, this model leverages a holistic, student-centered pedagogical approach. Central to this strategy are Project-Based Learning (PBL) and Experiential Learning, methods that are intrinsically congruent with KBC epistemology. Consequently, students are immersed in an active learning cycle, as depicted in Figure 2.

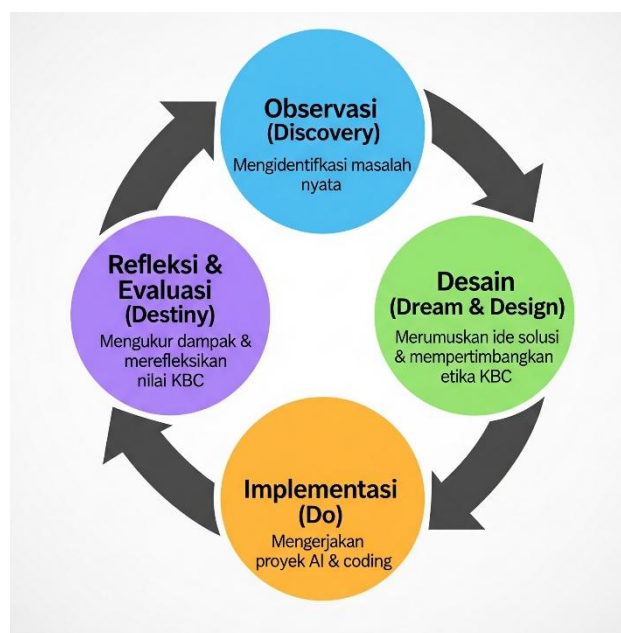


Figure 2. The Integrated Project-Based Learning Cycle Diagram

- a. Phase 1: Observation (Discovery)
Students identify tangible issues within the *madrasah* or community that resonate with the themes of *Panca Cinta* (for instance, bullying).
- b. Phase 2: Design (Dream & Design)
Students formulate ideas for AI and coding-based solutions, designing them with a focus on ethical implications as directed by KBC principles.
- c. Phase 3: Implementation (Do)
Students realize these solutions through practical application, guided by teacher supervision.
- d. Phase 4: Reflection & Evaluation (Destiny)
Students assess the project's impact, examining technical success and social contribution, and contemplate the manifestation of KBC values in their final output.

Instructional Methodology

If the curriculum represents the roadmap, then the instructional method serves as the operational vehicle. In the context of teaching value-laden coding, conventional didactic approaches, such as unidirectional lecturing, are increasingly viewed as obsolete. Such methods tend to diminish student engagement and lead to a superficial internalization of ethics, in which moral values are merely heard rather than ingrained in character. This study proposes an integration of Project-Based Learning (PBL) and Experiential Learning. However, standard PBL is deemed insufficient for achieving holistic educational objectives. Consequently, this research adopts the 4D Framework (Discovery, Design, Do, Destiny) to ensure that students are not only proficient in code syntax but also guided by a conscientious compass. This cycle guarantees that every technological project originates from empathy and culminates in profound reflection.

1. Phase 1: Discovery (Observation and Empathy) This phase emphasizes the principle of contextual inquiry, analogous to the Requirement Analysis or User Research stage in software development. It eschews premature technical execution; instead, students are directed to observe their surroundings to identify genuine problems.
 - Core Activities: Identifying real-world problems within the *Madrasah* environment or the broader community that align with the "Five Pillars of Love" (*Panca Cinta*) topics.
 - Educator's Role: Acting as a facilitator who stimulates students' social sensitivity through probing questions regarding environmental conditions.
 - Output: A valid Problem Statement.
 - Case Illustration: Students identify the inefficiency of ablution water usage in the school mosque. Rather than immediately fabricating hardware, students conduct quantitative data analysis (measuring the volume of wasted water), conduct qualitative interviews (with mosque caretakers), and understand the theological urgency of resource conservation.
2. Phase 2: Design (Ethical Conceptualization and Architecture) Once the problem is defined, students enter the solution design phase based on AI and coding. The primary distinction of this model lies in the ethical validation of the Love-Based Curriculum (KBC). Prior to code implementation, the system design must pass a moral feasibility assessment.
 - Core Activities: Designing algorithms, user interfaces (mockups), and logical system flows.
 - Mandatory Feature: Ethical Checkpoint. Students are required to conduct an impact analysis: assessing potential harm, alignment with Islamic values, and data bias.
 - Output: Project Proposal or Application Wireframe.

- Case Illustration: In designing an automated faucet based on Arduino sensors, students consider economic sustainability to ensure the device is replicable by other communities as a form of social benefit (*Da'wah*).
- 3. Phase 3: Do (Implementation and Technical Development). This phase constitutes the execution or development stage. Students implement the solution design through syntax construction and hardware assembly under educator supervision
 - Core Activities: Coding, hardware assembly, and debugging.
 - Educator's Approach: Functioning as a "Senior Developer" or technical mentor who guides the troubleshooting process, allowing students to learn from errors as a vital part of the cognitive process.
 - Value Integration: Inculcating patience and precision (*Itqan*) during debugging. The principle of Clean Code is taught as a manifestation of the beauty and order beloved by God.
 - Output: A functional prototype or Minimum Viable Product (MVP).
- 4. Phase 4: Destiny (Reflection and Impact Evaluation). Unlike conventional software development cycles that conclude with product release, this cycle culminates in reflection. This stage encompasses User Acceptance Testing (UAT) combined with a spiritual audit.
 - Core Activities: Project presentation, user testing, and Muhasabah (introspection).
 - Key Inquiries: Evaluation focuses on two aspects: the technical utility of the tool and the internalization of *Panca Cinta* values within the students upon project completion.
 - Output: Self-Reflection Report and an evaluation of inner satisfaction derived from the social contribution.

DISCUSSION

The conceptual model advanced in this research bridges a distinct gap in existing literature regarding the convergence of character education and technology in *madrasahs*. Historically, scholarship on *madrasah* curricula has been largely dominated by inquiries into religious pedagogy or social dynamics⁸. Meanwhile, technology education research has often prioritized technical proficiency at the expense of strong ethical grounding⁹. Consequently, this study provides a substantial scientific contribution by unifying these two previously disparate domains.

This argument is substantiated by evidence from pertinent journals, which, in examining the teacher's role in educational innovation, demonstrate that creative, student-centered methodologies significantly boost motivation. Our model not only resonates with these findings but transcends them by linking technological innovation (AI and coding) to the ultimate goals of character and ethics¹⁰. Furthermore, this approach echoes what posits that *madrasahs* require curricula that harmonize spiritual and digital intelligence; this model stands as the operationalization of that insight. By tethering AI and coding pedagogy to the philosophical bedrock of KBC, specifically *sympathea* and *tawaazun madrasahs*, they foster more than just proficiency; they instill "digital empathy." As a cornerstone of this framework, digital empathy guarantees that student-generated innovations remain benevolent, avoiding detriment to society, the environment, or the social fabric.

⁸ Aziza LJIPI, *Reformulasi Kurikulum Pendidikan Islam Dalam Era Disrupsi Digital (Jurnal Ilmiah Pendidikan Islam)* (2024) 3(2) 65-75 (Aziza, 2024)

⁹ Anggraini A, Anjelika A, Febriani E, *Implementasi Teknologi Digital Dalam Pendidikan Karakter Berbasis Nilai-Nilai Islam: Studi Kasus Di SMPN 23 Pesawaran, At-Tarbiyah: Jurnal Penelitian dan Pendidikan Agama Islam* (2025) 2(2) 372-384. (Anggraini et al., 2025)

¹⁰ Savira L, *Peran guru pada transformasi pendidikan dalam menyongsong generasi emas 2045, Al-Madaris Jurnal Pendidikan Dan Studi Keislaman* (2023) 4(2) 28-36. (Savira, 2023)

On the other hand, this framework serves as a response to challenges raised in recent scholarship. For example, emphasize the necessity of ethical oversight in AI to mitigate bias and discrimination¹¹. This model directly addresses that concern by positioning *Panca Cinta* as the moral compass, compelling students to engineer equitable and transparent technologies as a tangible expression of "Love for Self and Fellow Humans." Additionally, demonstrate that project-based learning significantly outperforms traditional didactic methods in cultivating character¹². Leveraging these insights, our model integrates a project-based methodology wherein students are mobilized to resolve social issues such as the bullying concerns highlighted in KBC guidelines and ecological challenges through constructive, tech-based solutions.

Furthermore, the model responds to the internal anxieties articulated in the KBC guidelines regarding bullying, violence, and intolerance. Through coding initiatives focused on "Love for Self and Fellow Humans" (e.g., designing anti-bullying platforms), students are actively mobilized to tackle these social ailments constructively using technology. Evidence suggests that this project-based methodology is superior to traditional lecture-based teaching in cultivating moral character. Succinctly, the synergy between KBC and AI & coding represents more than just curricular novelty; it provides a robust theoretical remedy for the complex challenges besetting modern education. By establishing KBC as the ethical foundation for technological advancement, *madrasahs* are better positioned to achieve a holistic educational vision, one that is relevant, grounded in character, and future-ready.

CONCLUSION

This study asserts that the dichotomy between character education and technical competence in technology instruction is a paradigm that must be transcended. The integration of the Love-Based Curriculum with AI and coding instruction through the 4D Framework (Discovery, Design, Do, Destiny) has proven effective in bridging this gap.

Specifically, this research draws three primary conclusions:

1. Orientation Shift: Coding instruction shifts from a sole focus on syntax and algorithmic logic to becoming a medium for practicing empathy and social problem-solving (Discovery & Design).
2. Value Internalization through Practice: The implementation phase (Do), framed by ethical values, teaches students that code quality (clean code) is a manifestation of personal integrity and a form of devotion (Itqan).
3. Transcendental Reflection: The addition of the Destiny phase introduces a new dimension to vocational education, where student satisfaction is measured not only by application functionality but also by the positive impact on users and the creator's inner fulfillment.

Thus, this synergy produces graduates who are not only prepared to face the challenges of Industry 4.0 or 5.0 but also possess a solid moral foundation to ensure technology remains subservient to humanity. Ultimately, this paper contributes a vital conceptual roadmap for the Ministry of Religious Affairs and *madrasah* institutions, enabling them to nurture a generation that wields technology with empathy and ethical integrity, thereby positioning themselves at the vanguard of character education in the digital age.

¹¹ Cahyono N, Mukaromah S, *Etika penggunaan kecerdasan buatan pada teknologi informasi, Prosiding Seminar Nasional Teknologi Dan Sistem Informasi (2023) 3(1) 482-491.* (Cahyono & Mukaromah, 2023)

¹² Nurfalalah S, Sumitra S, *Pembelajaran Berbasis Proyek sebagai Pendekatan Pembentukan Karakter: (Studi pada Mata Pelajaran Akhlak di MA Yapina), Jurnal Manajemen dan Pendidikan Agama Islam (2025) 3(6) 309-318.* (Nurfalalah et al., 2025)

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