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Does The Age of AI Influence Character Building of Primary School Students? A Qualitative Study among Malaysian Teachers

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ABSTRACT

The rapid integration of artificial intelligence (AI) into primary education has transformed learning environments, raising critical questions about its influence on students' character building. While existing studies largely emphasize academic outcomes and technological efficiency, limited empirical attention has been given to the moral, emotional, and social implications of AI use among young learners, particularly in Southeast Asian contexts. This qualitative study explores Malaysian primary school teachers' perceptions of how AI affects students' character development in the Age of AI. Drawing on Bandura's Social Cognitive Theory and Kohlberg's Stages of Moral Development, the study adopts a phenomenological approach to capture teachers' lived experiences. Data were collected through semi-structured interviews with twelve teachers from six government primary schools in Negeri Sembilan and Selangor, all of whom had experience integrating AI-based tools into classroom instruction. Thematic analysis revealed three overarching themes: (1) AI as a double-edged sword that simultaneously enhances learning motivation while weakening empathy, patience, and moral reflection; (2) teachers' evolving role as moral mediators who actively contextualize and humanize AI-assisted learning; and (3) ethical and structural challenges, including limited professional training, curriculum constraints, and fears of dehumanization. The findings suggest that AI's influence on character building is not inherently deterministic but highly dependent on pedagogical intent and moral guidance. This study contributes to the emerging discourse on AI ethics and character education by highlighting teachers' central role in sustaining moral development within AI-mediated classrooms. The study recommends embedding AI ethics into primary curricula, strengthening teachers' ethical digital pedagogy, and adopting human-centered approaches to ensure that technological advancement aligns with moral and cultural values.

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1. Introduction

The 21st century has ushered in an era where artificial intelligence (AI) is increasingly shaping how children learn, interact, and construct meanings [65]. As schools integrate intelligent tutoring systems, adaptive learning platforms, and AI-assisted communication tools, education is rapidly transitioning from traditional teacher-centered approaches to technology-mediated environments [84]. While AI offers new opportunities for personalized instruction and problem-solving, it also raises profound questions regarding its impact on character building [71], specifically the cultivation of moral values, empathy, integrity, and social responsibility among young learners [60]. Scholars such as Holmes *et al.*, [44] argue that the rise of AI represents not only a technological revolution but also a moral challenge for educators, as the formation of human character is no longer influenced solely by teachers, peers, and parents, but also by algorithmic interactions and digital ecosystems.

Globally, AI has been integrated into education systems to enhance teaching efficiency, automate feedback, and support individualized learning paths [44]. In Malaysia, initiatives such as the AI in Education Roadmap (2021–2027) and the Malaysia Digital Education Policy [49] promote AI literacy among teachers and students, aiming to prepare future citizens for the Fourth Industrial Revolution (IR4.0). However, as AI becomes embedded in learning environments, primary school educators are beginning to observe shifts not only in how children acquire knowledge [73], (but also in how they behave, express emotions, and relate to others [6]. Some teachers express concern that constant exposure to screen-based, automated systems reduces patience, empathy, and moral reflection in the context of character building, as qualities traditionally nurtured through human interaction [9].

Thus, character building has always been central to Malaysia's education philosophy, as stated in the National Education Philosophy (*Falsafah Pendidikan Kebangsaan*), which envisions developing individuals who are intellectually, spiritually, emotionally, and physically balanced [2]. Character education programs such as *Program Nilam*, *Budi Pekerti*, and *Sekolah Penyayang* emphasize moral behavior, civic responsibility, and emotional intelligence [28]. However, the introduction of AI technologies from chatbot tutors to gamified learning platforms introduces new ethical dimensions. Children now engage with virtual assistants capable of giving emotional feedback, generating answers instantly, and providing entertainment disguised as learning [83]. These interactions, though efficient, may undermine the development of perseverance, empathy, and self-regulation if not guided by teachers with moral intent.

Hence, this study is grounded in Bandura's Social Cognitive Theory [7,8] and Kohlberg's Stages of Moral Development [40]. Social Cognitive Theory posits that learning occurs through observation, imitation, and reinforcement within social contexts (Firmansyah and Saepuloh, 2022). However, in AI-driven learning environments, part of that "social" context is now simulated which is mediated by non-human agents [21]. This shift raises questions about how children internalize moral cues when the model is an algorithm rather than a person. Similarly, Kohlberg's framework suggests that moral reasoning develops through active dialogue, conflict resolution, and exposure to moral dilemmas [54]. When AI platforms deliver predefined or automated feedback, the scope for moral reflection may diminish [50]. Teachers thus play a critical role in mediating the moral effects of AI, ensuring that digital tools supplement rather than supplant human character guidance.

From a philosophical perspective, nevertheless, scholars such Wullenkord and Eyssel [78] caution against the "dehumanization" of learning, where technology prioritizes efficiency over empathy. Others, such as Schicktanz *et al.*, [67], argue that AI can foster moral growth if used to simulate ethical dilemmas or encourage reflective learning. Eventually, this duality suggests that the Age of AI is neither inherently beneficial nor harmful to character development; rather, its influence depends on how teachers and schools integrate it within moral pedagogy.

In Malaysia, initially, AI integration in primary schools is still in its formative phase [35]. Pilot programs under the Digital Education Transformation Plan have introduced AI-enabled language and mathematics platforms, especially in urban and semi-urban schools [83]. Teachers in these contexts have noticed both positive and negative shifts in student behavior. For example, some reports improved curiosity, problem-solving, and self-directed learning [3], while others note declines in patience, face-to-face communication, and respect for authority. These observations highlight a critical tension: how to nurture human character in environments increasingly mediated by AI.

Not to mention, cultural factors further complicate this issue. Malaysian schools are guided by collectivist values emphasizing harmony, respect for elders, and communal responsibility based on National Principle (*Rukun Negara*) [47]. AI technologies, by contrast, often promote individual efficiency and autonomy. Teachers thus face the complex task of balancing technological innovation with cultural-moral traditions ensuring that students grow not only as digitally skilled individuals but as morally grounded citizens [34].

Given these emerging issues, the present study seeks to explore how Malaysian primary school teachers perceive and navigate the influence of AI on character building among their students. By drawing on qualitative interviews with twelve teachers across various schools, this research aims to uncover the lived realities, reflections, and classroom practices associated with character formation in the age of AI. The key research questions are as follows:

- a. How do primary school teachers in Malaysia perceive the impact of AI on students' moral and social character?
- b. What pedagogical approaches do teachers use to integrate AI tools without compromising moral values?
- c. What barriers or ethical dilemmas did teachers encounter in character education in the Age of AI?

Significantly, this study contributes to the growing body of literature at the intersection of AI ethics and moral education, particularly within Southeast Asia's primary education context. It provides empirical insights into how teachers interpret their roles as moral guides amidst technological disruption. The findings are expected to inform policymakers, curriculum developers, and teacher training institutions in designing AI-integrated moral pedagogy frameworks aligned with Malaysia's national educational aspirations.

2. Literature Review

2.1 The Age of Artificial Intelligence in Education

Artificial Intelligence (AI) has emerged as a transformative force in education, enabling personalized learning, intelligent tutoring, and automated feedback systems. AI-driven tools such as chatbots, adaptive learning systems, and gamified educational apps have revolutionized how students engage with knowledge [44]. Globally, the integration of AI into education systems is driven by the pursuit of efficiency, inclusivity, and equity. UNESCO [73] emphasizes that AI can enhance accessibility for diverse learners, particularly in developing countries, by supporting individualized instruction and reducing teacher workload.

However, scholars such as Holmes *et al.*, [33] caution that AI may inadvertently reshape not only cognition but also social behavior and moral reasoning. Unlike traditional human-mediated learning, AI-based systems prioritize algorithmic optimization over ethical reflection. This transformation raises concerns that the increasing reliance on AI may affect the moral ecology of classrooms such the interpersonal, value-laden context in which character is formed. As Borenstein and Howards [11]

highlight, the more education depends on machines, the greater the need for moral safeguards to prevent emotional detachment and ethical erosion among young learners.

2.2 Character Building and Moral Education

Character building is a multidimensional construct encompassing moral, emotional, and social development. According to Purwaningsih [61], character education involves cultivating virtues such as respect, responsibility, empathy, and integrity. It extends beyond moral instruction to include modeling, reinforcement, and participatory experiences. In school contexts, character building is embedded through the hidden curriculum such as the unspoken social norms, interactions, and value-laden practices that shape students' moral behavior [51].

Recent research underscores the urgency of moral education in an era of technological saturation. Adam and Mohamad Nasri [1] argue that digital environments can either strengthen or weaken moral sensitivity depending on how teachers guide students' use of technology. In the primary school years, indeed, children are especially impressionable; they internalize norms from both human role models and digital influences [5]. Therefore, the introduction of AI tools in classrooms requires careful moral framing to ensure technology supports rather than supplants ethical development.

2.3 Theoretical Framework: Social Cognitive and Moral Development Perspectives

This study draws upon two interrelated frameworks: Bandura's Social Cognitive Theory [7] and Kohlberg's Stages of Moral Development [40]. Bandura posits that individuals learn behavior through observation and imitation within social contexts. In classrooms, teachers and peers traditionally provide moral models for students to emulate. However, as AI systems increasingly mediate instruction, the "models" that children observe may include algorithmic entities lacking human emotion or ethical judgment. This introduces uncertainty about how children interpret social cues, empathy, or moral consequences in AI-mediated learning [77].

Kohlberg's theory, on the other hand, emphasizes that moral reasoning develops through dialogue, reflection, and resolution of moral dilemmas. AI-based instruction, by automating decision-making and feedback, may reduce opportunities for moral reasoning and social discourse [58]. Nonetheless, proponents argue that AI can also simulate ethical dilemmas, prompt reflective thinking when used intentionally by teachers [36]. Thus, the role of educators is pivotal in mediating between algorithmic efficiency and moral reflection.

2.4 AI and Moral Education: A Double-Edged Sword

From a positive perspective, AI can facilitate moral education by providing safe environments for ethical exploration. For instance, AI-driven simulations can recreate moral dilemmas and help students examine consequences without real-world risks [86]. Gamified platforms such as ClassDojo and Google's Be Internet Awesome have shown promise in promoting empathy, digital citizenship, and self-regulation through interactive learning experiences [17]. In this sense, AI can reinforce virtues corresponding responsibility and cooperation when paired with values-based pedagogy.

Conversely, critical perspective warns that AI may inadvertently erode core human values. Studies by Lu *et al.*, [43] suggest that overreliance on AI-driven feedback can diminish perseverance and self-discipline, as students expect instant answers rather than engaging in effortful moral reasoning. Furthermore, AI personalization algorithms often reward speed and efficiency, potentially

discouraging traits such as patience and humility [9]. Moral disengagement may also occur when students interact more with digital systems than with human teachers, reducing opportunities for empathy and collective moral dialogue [45].

2.5 Character Education in the Malaysian Context

In Malaysia, character and moral education are enshrined in the *Falsafah Pendidikan Kebangsaan* (FPK) or the National Education Philosophy, which seeks to develop individuals who are “balanced and harmonious in the intellectual, spiritual, emotional, and physical aspects.” Moral and civic values are integrated across subjects, while programs such as *Program Jati Diri* and *Rancangan Integrasi Murid untuk Perpaduan* (RIMUP) emphasize social harmony, discipline, and empathy [49].

However, recent policy shifts under the Malaysia Digital Education Policy (2022) and AI Roadmap (2021–2027) have accelerated the introduction of AI tools in classrooms (MOE, 2025). Primary schools increasingly adopt AI-enabled learning systems for language, mathematics, and science subjects [81]. While these tools enhance student engagement, teachers report emerging behavioral shifts including reduced interpersonal communication and overdependence on digital guidance [83]. As a result, educators are grappling with how to preserve humanistic values amid digital transformation.

Empirical research on this issue in Malaysia remains limited. Studies by Coppin [20] and Vorobyeva *et al.*, [74] found that teachers acknowledge the potential of AI for personalized learning but express concern over its moral implications. They note that students tend to exhibit less patience and empathy when interacting with AI-based systems compared to peer collaboration. These findings align with broader global observations suggesting that AI integration, if unmediated, may unintentionally weaken students’ moral agency.

2.6 The Emerging Field of AI Ethics in Education

AI ethics has become an increasingly important subfield in educational research. It focuses on ensuring that AI technologies promote fairness, transparency, accountability, and human well-being [33]. For primary education, this means creating digital environments that support moral learning rather than merely automating tasks. Scholars emphasize that AI should be human-centered, designed to augment rather than replace moral instruction [53].

In Malaysia, AI ethics is still a nascent concept within teacher education. Most teacher training programs focus on technical digital literacy but neglect the moral dimensions of AI usage. As such, there is a pressing need for AI ethics pedagogy specifically professional development that equips teachers to guide students’ ethical use of technology and to recognize moral implications of digital behavior [46]. Integrating AI ethics into character education, indeed, could help Malaysian schools balance technological advancement with moral integrity.

2.7 Research Gap

While international scholarship has begun to address the ethical dimensions of AI in schooling, few studies have empirically examined its influence on character building among primary school students, particularly from the perspectives of teachers who directly observe behavioral changes. In Malaysia, existing studies largely focus on AI’s academic outcomes such as learning performance, engagement, and motivation rather than its moral or social effects. Consequently, there is limited understanding of how teachers interpret AI’s moral influence, the strategies they employ to uphold

character education, and the challenges they encounter in AI-integrated classrooms. Thus, this study addresses this gap by qualitatively exploring Malaysian primary school teachers' experiences and perceptions of character building in the age of AI. Through in-depth interviews with twelve educators, it seeks to capture the nuanced realities of how technology is reshaping moral formation in early education.

3. Methodology

3.1 Research Design

This study employed a qualitative phenomenological design to explore how Malaysian primary school teachers perceive and respond to the influence of Artificial Intelligence (AI) on students' character building. The phenomenological approach was chosen since captures the lived experiences and meanings teachers ascribe to their daily encounters with AI in classroom settings [22,55]. Rather than seeking statistical generalization, this design focuses on rich, contextualized understanding of human experience [19,76]. Thus, in this study it focuses on how educators interpret changes in student morality, social behavior, and values within AI-mediated learning environments.

3.2 Research Setting and Participants

The study was conducted in six government primary schools across Negeri Sembilan and Selangor, two states actively implementing Malaysia's Digital Education Policy. These schools were selected through purposive sampling to ensure diversity in geography, socioeconomic background, and technological exposure [24,27,79]. Twelve teachers (coded as T1–T12) participated in the study. All had between 5 to 20 years of teaching experience and had integrated at least one AI-based or digital adaptive learning tool in their classroom. All teachers gave informed consent, and pseudonyms were used to ensure confidentiality. The schools were anonymized to protect institutional identities. Table 1 summarizes participant characteristics.

Table 1

Participant characteristics

Teacher Code	Gender	Teaching Experience (Years)	Subject Taught	State	AI Tools Used
T1	Female	8	English	Negeri Sembilan	ChatGPT-based writing app
T2	Male	15	Science	Selangor	Adaptive quiz system
T3	Female	12	Moral Education	Negeri Sembilan	ClassDojo AI
T4	Female	10	Bahasa Melayu	Selangor	Google Assistant
T5	Male	6	ICT	Negeri Sembilan	AI tutoring system
T6	Female	18	Islamic Education	Selangor	YouTube Kids AI recommender
T7	Female	7	Mathematics	Negeri Sembilan	SmartLearn
T8	Male	20	Moral Education	Selangor	AI chatbot feedback
T9	Female	9	English	Negeri Sembilan	AI grammar checker
T10	Female	14	Moral Education	Selangor	Gamified moral AI app
T11	Male	5	Science	Negeri Sembilan	Adaptive learning app
T12	Female	13	Moral Education	Selangor	Edmodo AI suggestions

3.3 Data Collection

Data were collected between March and June 2025 through semi-structured interviews [10,32] conducted in either English or Bahasa Malaysia, depending on teacher preference. Each interview lasted 45–60 minutes and was conducted face-to-face or via Google Meet due to scheduling flexibility [26].

The interview protocol was designed around three guiding dimensions [63,64]:

- a. Perception of AI's influence on students' character ("How do you think AI has changed your students' behavior or values?").
- b. Teaching strategies to integrate character education alongside AI tools ("How do you ensure AI does not replace moral instruction?").
- c. Challenges and ethical dilemmas ("Have you faced situations where AI use conflicted with moral values?").

Interviews were audio-recorded with permission, transcribed verbatim, and translated into English for analysis [57]. Field notes [66] and reflective memos [52] were maintained to capture contextual observations and research reflections.

3.4 Data Analysis

Data were analyzed using Braun and Clarke's [12] six-step thematic analysis:

- a. Familiarization — repeated reading of transcripts and initial note-taking.
- b. Coding — generation of initial codes representing recurring ideas ("loss of empathy," "AI as motivator," "teacher moral mediation").
- c. Theme Development — clustering related codes into broader themes.
- d. Reviewing Themes — checking coherence across data and refining boundaries.
- e. Defining and Naming Themes — articulating essence of each theme.
- f. Producing Report — selecting vivid excerpts to illustrate each theme.

NVivo 14 software was used to organize codes and ensure systematic analysis [59]. (Three major themes and eight subthemes emerged (discussed in Section 5).

3.5 Trustworthiness of Data

To ensure credibility, dependability, and confirmability [42,70], several strategies were employed:

- a. Member Checking: Transcripts and summarized findings were returned to participants for verification.
- b. Triangulation: Multiple sources (teachers from different schools, subjects, and AI tools) ensured diversity of perspectives.
- c. Peer Debriefing: Two senior education researchers reviewed emerging themes for interpretive validity.
- d. Audit Trail: Detailed records of data coding and analytic decisions were maintained for transparency.
- e. Reflexivity: The researcher maintained reflective journals to monitor potential biases as an educator familiar with AI integration.

3.6 Ethical Considerations

Ethical approval was obtained from the Ministry of Education Malaysia (MOE/EDU/2025/AI-CHAR-12) and the University Research Ethics Committee. Participants were assured that:

- a. Participation was voluntary, with the right to withdraw at any time.
- b. No identifying data (names, schools, or locations) would appear in published reports.
- c. Data would be stored securely and used solely for academic purposes.

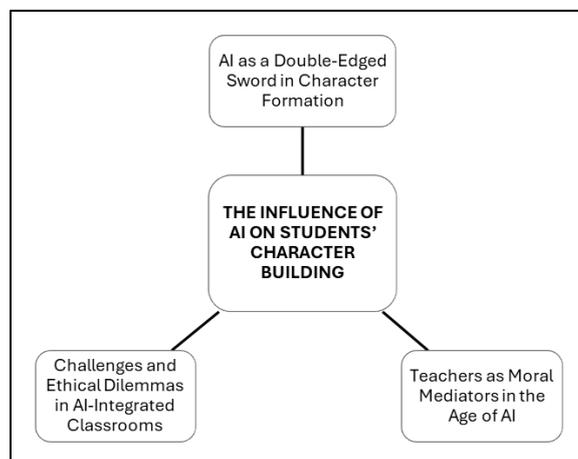
Respecting teachers' workloads and time constraints, interviews were scheduled flexibly after class hours. Data collection followed the Belmont Report principles of respect, beneficence, and justice [88].

In the context of researcher positionality, the researcher, a senior lecturer in education, approached the study as an insider-outsider. As a Malaysian educator with experience in EdTech training, the researcher shared contextual understanding but maintained neutrality to avoid influencing responses. Reflexive journaling was used to critically assess assumptions about AI's moral impact and to remain grounded in participants' voices [87].

Ultimately, this methodology provides a robust foundation for understanding the nuanced, teacher-driven perspectives on AI's role in moral and character formation among primary school students. The design ensures depth, authenticity, and ethical rigor, aligned with international qualitative research standards.

4. Results

Thematic analysis of interviews with twelve Malaysian primary school teachers revealed three overarching themes that characterize how teachers perceive the influence of AI on students' character building:



4.1 Theme 1: AI as a Double-Edged Sword in Character Formation

Teachers commonly described AI as having both positive and negative influences on students' moral and social development. While AI encouraged curiosity, self-directed learning, and motivation, it simultaneously risked diminishing empathy, patience, and ethical reflection.

4.1.1 Subtheme 1.1: AI as a motivator and moral enhancer

Several teachers emphasized AI's capacity to motivate students and nurture responsible learning habits. They perceived AI as capable of cultivating positive values such as diligence, discipline, and self-improvement.

"Students become more independent now. The AI apps remind them to finish tasks, give quick feedback, and they feel proud when they achieve goals. That's part of character too — learning to take responsibility." (T3, Moral Education teacher)

"When I use AI-based quizzes, my pupils become more focused. They learn persistence because they want to get better scores. I see this as digital discipline." (T7, Mathematics teacher)

Teachers viewed AI tools as instrumental in developing self-efficacy, particularly among less confident students. For example, adaptive systems that personalize difficulty levels helped build resilience and confidence, which teachers equate with moral perseverance.

However, some noted that these benefits depend heavily on teacher guidance. Without moral framing, AI-driven motivation risks becoming purely performance-based rather than value-oriented.

4.1.2 Subtheme 1.2: Declining empathy and human connection

Conversely, a majority of teachers expressed concern that constant interaction with AI may reduce emotional sensitivity and interpersonal empathy among students.

"When they chat with AI, it's all about getting answers, not feelings. They don't say 'thank you' or show care to others. Even when working in groups, they prefer to ask the app instead of helping their friends." (T9, English teacher)

"Some pupils talk to the chatbot more than to their classmates. I worry they are learning that machines can replace real people." (T1, English teacher)

Teachers linked these behaviors to reduced social awareness, noting that AI-mediated learning encourages individual efficiency over communal cooperation — a shift misaligned with Malaysia's collectivist and moral education ethos.

4.1.3 Subtheme 1.3: Instant gratification and reduced moral patience

Another recurring concern was the instant gratification effect of AI systems. Many teachers observed that AI tools, by providing immediate answers and automated corrections, weaken students' patience and reflective thinking.

"Before, students would think longer or discuss moral stories. Now, if they can't find the answer quickly, they get frustrated. AI makes them expect speed, not process." (T5, ICT teacher)

Teachers perceived this behavior as detrimental to virtues such as self-control, perseverance, and humility, all foundational to character education. They stressed the importance of maintaining balance between technological efficiency and moral endurance.

4.2 Theme 2: Teachers as moral mediators in the age of AI

Despite challenges, teachers actively positioned themselves as moral mediators who guide students in using AI responsibly and ethically. They saw their role evolving from knowledge transmitters to moral facilitators in technologically complex classrooms.

4.2.1 Subtheme 2.1: Integrating AI ethics into daily lessons

Several teachers reported embedding AI ethics discussions into classroom activities, especially when students interacted with digital tools. This involved reminding students about honesty, respect, and appropriate digital behavior.

"I always tell my pupils; AI is clever but not human. You must still think with your heart. We talk about when to use it and when not to. That's moral learning." (T6, Islamic Education teacher)

"When we use ChatGPT-type apps, I explain plagiarism and truth. I make them discuss what honesty means in the digital world." (T4, Bahasa Melayu teacher)

Teachers demonstrated agency in translating traditional moral values into digital contexts, helping students discern right and wrong in AI-assisted learning.

4.2.2 Subtheme 2.2: AI as a tool for moral reflection

Interestingly, some teachers used AI to simulate moral dilemmas, prompting reflection and dialogue.

"I once asked AI to generate a story about cheating in exams. Then we discussed if AI was right about the ending. Students became very engaged — they questioned what honesty means." (T8, Moral Studies teacher)

Such pedagogical creativity aligns with emerging literature suggesting AI can enhance moral reasoning when used intentionally (Lin et al., 2023). Teachers framed AI not as a threat but as a pedagogical partner — a stimulus for moral conversation rather than moral substitution.

4.2.3 Subtheme 2.3: Balancing technological innovation and moral guidance

Teachers repeatedly emphasized the need for balance between AI-driven innovation and traditional moral teaching.

"Technology is part of their world now. We can't reject it, but we must remind them that values still come from people, not machines." (T2, Science teacher)

"We are not only teaching subjects; we are shaping character. AI can help, but the teacher must still be the moral compass." (T10, Civic Education teacher)

This balance was described as "digital moral pedagogy" — integrating ethics into every technology-based activity, ensuring that digital skills and human virtues develop together.

4.3 Theme 3: Challenges and Ethical Dilemmas in AI-Integrated Classrooms

While teachers embraced AI's potential, they faced significant challenges in implementing moral education within AI-mediated contexts.

4.3.1 Subtheme 3.1: Lack of training in AI and moral integration

Teachers expressed frustration at the lack of professional development addressing how to merge AI use with moral pedagogy.

"We get workshops on how to use AI apps, but not on how to guide students' values while using them. That part is missing." (T11, Science teacher)

"Many teachers feel unsure about what kind of moral lessons to include when students are using AI tools." (T3, Moral Education teacher)

The visualization of Figure 1 highlights the central themes of your data, emphasizing the relationship between moral development, ethics, and character education in the context of digital learning. Key terms such as responsibility, empathy, values, and guidance appear prominently, reflecting the dual role of technology as both a motivator and a challenge to human connection and patience.

Ultimately, the findings suggest that AI's impact on primary students' character development is a multifaceted phenomenon, contingent upon specific pedagogical contexts and balancing enhanced student motivation against potential ethical and emotional risks. Central to this dynamic is the teacher's role as a moral mediator, which remains an indispensable cornerstone of character formation despite the transformative influence of technological integration. Consequently, ensuring the moral sustainability of AI in education necessitates the systematic incorporation of AI ethics into both teacher training and curriculum design, supported by robust collaborative frameworks among educators, parents, and policymakers.

5. Discussions, Implications, Limitations and Future Research

5.1 Overview

This study explored Malaysian primary school teachers' perceptions of how Artificial Intelligence (AI) influences students' character building within digital learning contexts. Through interviews with twelve teachers across Negeri Sembilan and Selangor, three core themes emerged: AI as a double-edged tool, teachers as moral mediators, and the rise of ethical digital citizenship. The findings suggest that while AI fosters engagement, autonomy, and curiosity, it also poses risks of emotional detachment, moral ambiguity, and dependence on algorithmic feedback. These dualities echo the global debate about AI's role in education, emphasizing the need for balanced moral- and technological integration [33,44].

5.2 AI as a Double-Edged Tool: Balancing Cognitive and Moral Outcomes

The teachers' perception of AI as a double-edged sword resonates with prior literature emphasizing both its pedagogical affordances and ethical risks. Studies have shown that AI-powered tools can enhance personalized learning, problem-solving, and curiosity [16,86]. However, as several participants (T5 and T8) noted, AI's constant provision of instant answers may inadvertently weaken empathy, patience, and collaborative spirit. These findings align with Katz and Dauber's [38] argument that overreliance on AI can lead to "moral outsourcing," where students rely on algorithms rather than interpersonal reasoning to resolve dilemmas.

In the Malaysian context, where character education (Pendidikan Moral and Pendidikan Islam) is integral to the national curriculum, AI's increasing classroom presence requires new frameworks to ensure moral guidance keeps pace with digitalization. Teachers observed that while AI can reinforce self-learning habits, it may also desensitize children to real-world moral situations. As T3 expressed, *"They learn to talk to AI politely, but sometimes not to their friends."* This paradox underscores the importance of balancing cognitive efficiency with moral empathy and social connection.

5.3 Teachers as Moral Mediators in AI-Mediated Learning

The second major finding of the shifting role of teachers as moral mediators reveals a professional identity transformation. Rather than merely transferring knowledge, teachers increasingly act as ethical gatekeepers who interpret and contextualize AI-generated information for young learners.

This observation echoes Freeman *et al.*, [30], who highlight educators' emerging responsibility to navigate the moral dimensions of algorithmic education. Teachers in this study demonstrated awareness of their mediating role by modeling values of integrity, respect, and humility when using AI tools. This aligns with Bandura's [8] theory of moral agency, which suggests that moral learning occurs not only through instruction but through observational modeling. By consciously integrating moral reflection into technology use, teachers re-anchor education within humanistic values. For instance, T6 noted: "When students ask, 'Why should we think if AI knows everything?', I tell them — because wisdom is not just information."

However, the interviews also exposed a gap in professional readiness. Many teachers expressed limited training in ethical AI literacy and digital citizenship pedagogy. This finding parallels Chai *et al.*, [15], who identified a global shortage of teacher preparation programs addressing the ethical aspects of AI. The implication is clear: to sustain moral formation in an AI-saturated environment, teacher education curriculum must evolve to include modules on AI ethics, emotional intelligence, and moral reasoning.

5.4 Emerging Ethical Awareness and Digital Citizenship

The final theme highlights how students are gradually developing ethical awareness when guided appropriately. Teachers described young learners beginning to question algorithmic fairness, privacy, and bias. T10 recounted a notable incident where a student asked why an AI story generator "always made the hero a boy." Such reflections indicate the early stages of digital moral reasoning, an encouraging sign for character education in the AI era. This aligns with Ribble's (2015) framework of digital citizenship, emphasizing responsibility, respect, and safety in online and AI interactions. Teachers observed that guided reflection such as class discussions about AI's "feelings" or fairness to helped students translate digital ethics into moral understanding.

Nevertheless, ethical awareness remains uneven. Some teachers reported that students struggled to distinguish between virtual and real empathy. This confusion parallels concerns raised by Siau and Wang [69], who argue that AI's anthropomorphic design can blur children's perception of moral agency. Therefore, schools must explicitly teach students to differentiate machine responses from human emotions to preserve authentic empathy.

5.5 Theoretical Implications

The findings contribute to emerging discourse on AI-mediated moral development by extending Kohlberg's [40] moral reasoning theory into digital contexts. While Kohlberg emphasized cognitive reasoning through social interaction, this study suggests that AI systems now act as "virtual interlocutors" in that process. However, these interactions lack moral reciprocity, meaning that without human mediation, students' moral reasoning may stagnate at lower developmental stages.

Additionally, the study reinforces Bandura's social cognitive theory, highlighting that moral learning remains observational and relational, even when mediated by technology. Teachers' modeling, feedback, and contextual framing of AI experiences become essential in shaping students' ethical self-regulation. Thus, the "age of AI" does not replace moral education—it reconfigures its channels.

5.6 Practical Implications for Policy and Practice

5.6.1 Integrating AI ethics into character education

The Ministry of Education Malaysia (MOE) should embed AI ethics and moral reasoning modules into the existing Moral and Islamic Studies curriculum. Lessons could include topics such as *algorithmic fairness*, *digital empathy*, and *AI accountability*, contextualized for primary learners. This integration aligns with Malaysia's Digital Education Policy 2025–2035, which emphasizes responsible and human-centered AI use.

5.6.2 Professional development for teachers

Professional development should move beyond technical AI training toward ethical pedagogy. Workshops can focus on case-based discussions, simulations, and reflective practice around moral dilemmas involving AI use in classrooms. International models, such as UNESCO's AI Competency Framework for Educators [72], offer practical guidelines adaptable to Malaysian schools.

5.6.3 Strengthening School Culture and Parental Involvement

AI literacy and character formation are not confined to classrooms. As several participants noted, students often interact with AI at home through chatbots, games, or YouTube recommendations. Therefore, school–parent collaboration is crucial. Schools could hold awareness sessions for parents on managing AI exposure and reinforcing consistent moral values between home and school.

5.6.4 Policy for AI ethics governance

At the institutional level, educational authorities should develop AI Ethics Governance Guidelines that address student data privacy, algorithmic bias, and equitable access. These guidelines should ensure that AI use in schools promotes holistic development rather than mere academic performance.

5.7 Limitations and Future Research

While the study provides rich insights, it is limited by its small qualitative sample of twelve teachers from two states, which restricts generalizability. Future research could adopt mixed-methods designs or comparative cross-state analyses to validate and expand these findings. Additionally, exploring students' and parents' perspectives could deepen understanding of AI's moral influence in diverse cultural contexts. Longitudinal studies tracking moral development over time would further clarify AI's sustained effects on character education.

Future investigations should expand beyond teacher perceptions to include students' and parents' experiences, enabling a holistic understanding of AI's moral impact across the learning ecosystem. Mixed-methods or longitudinal studies could trace how continuous AI exposure shapes moral reasoning over time. Comparative studies between rural and urban schools or across Southeast Asian contexts could reveal how cultural factors mediate AI's moral influence. Researchers should also explore AI-assisted moral pedagogy, for example, the utilization of AI chatbots to simulate ethical dilemmas or role-playing scenarios to assess whether guided interaction can enhance moral reflection rather than diminish it.

Ultimately, this study underscores that the age of AI does not diminish the moral role of teachers and it amplifies it. AI can inspire curiosity, creativity, and reflection, but it cannot substitute for empathy, conscience, or wisdom. As Malaysian educators navigate this new frontier, they must reimagine moral education not as a resistance to AI, but as a humanistic partnership with it. The challenge is not whether AI will influence character or it already does but how teachers and policymakers can guide that influence toward virtue, not vanity.

6. Conclusion

The findings of this qualitative study reveal that Artificial Intelligence (AI) is increasingly intertwined with the moral and character development of Malaysian primary school students. Based on the voices of twelve teachers from Negeri Sembilan and Selangor, the study concludes that AI's influence on character building is complex, paradoxical, and context-dependent. AI-driven tools foster engagement, curiosity, and independence—qualities associated with 21st-century learning—but simultaneously risk eroding empathy, patience, and interpersonal communication if left unguided. The study's thematic analysis identified three interconnected realities. First, AI functions as a double-edged tool, capable of cultivating both positive learning behaviors and moral complacency. Second, teachers now play a heightened role as moral mediators, guiding students through ethical reasoning within AI-mediated learning. Third, the rise of digital moral awareness among students indicates emerging potential for AI to act as a mirror for ethical reflection, provided that moral education remains intentional and human-centered. Theoretically, this research extends Kohlberg's moral development theory and Bandura's social cognitive framework into the digital domain, showing that moral reasoning remains relational even when mediated by technology. AI does not replace the need for moral modeling—it magnifies its urgency. Therefore, the "age of AI" in education should be seen not as a threat to character formation but as a transformative opportunity for educators to redefine moral pedagogy through digital contexts. Finally, the findings underscore a fundamental truth: technology may change the medium of learning, but not the mission of education. The moral core of teaching remains unchanged to nurture compassionate, reflective, and responsible human beings. In the age of AI, teachers are not replaced; they are redefined as moral architects who humanize technology and safeguard the ethical heart of learning. As Malaysian classrooms become increasingly intelligent, the challenge is not whether AI will influence students' character and it already does but how education can ensure that influence aligns with empathy, respect, and integrity. The future of moral education will depend not on resisting AI, but on teaching children to be more human in an age of intelligent machines.

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