

REFRAMING STUDENT AGENCY IN THE AGE OF GENERATIVE AI: KHALIFAH CONSCIOUSNESS AND *NGAJI DIRI* IN ISLAMIC EDUCATION

Novi Sylvia¹, Ahman², Syamsu Yusuf³, Deni Hadiana⁴

¹²³Indonesia University of Education, Bandung, Indonesia

⁴National Research and Innovation Agency, Jakarta, Indonesia

novi.sylvia@upi.edu; ahman@upi.edu; syamsu@upi.edu; deni.hadiana@brin.go.id

ABSTRAK

Perkembangan pesat kecerdasan buatan generatif telah menggeser pembelajaran dari sekadar akses terhadap informasi menuju penguatan agensi yang bermakna. Diskursus mengenai *student agency* selama ini menekankan aspek otonomi dan pilihan belajar, namun sering kali mengabaikan dimensi etis dan reflektif. Studi konseptual ini bertujuan merumuskan kembali konsep *student agency* dalam pendidikan Islam melalui integrasi konsep manusia sebagai *khalifah* dengan kearifan lokal Sunda *ngaji diri* sebagai landasan pembelajaran yang reflektif dan beretika di era digital. Penelitian ini menggunakan pendekatan *integrative literature review* dengan mensintesis kajian tentang *student agency*, pemikiran pendidikan Islam, serta studi budaya mengenai praktik refleksi diri, untuk membangun kerangka konseptual yang responsif terhadap tantangan pendidikan di era AI generatif. Hasil analisis menunjukkan bahwa kesadaran sebagai *khalifah* menempatkan agensi dalam kerangka tanggung jawab moral dan pengelolaan kehidupan sosial serta lingkungan, sementara praktik *ngaji diri* menumbuhkan kesadaran reflektif dan regulasi diri yang penting bagi keberlanjutan proses belajar. Integrasi kedua perspektif tersebut memaknai ulang agensi bukan sekadar sebagai otonomi individu, melainkan sebagai keterlibatan belajar yang etis, reflektif, dan bertanggung jawab secara sosial dalam ekosistem pembelajaran berbasis teknologi. Studi ini menegaskan bahwa pendidikan Islam memiliki potensi kontribusi penting dalam membangun masa depan pendidikan yang berkelanjutan melalui pengembangan peserta didik yang mampu memanfaatkan teknologi digital secara sadar, reflektif, dan bertanggung jawab. Kerangka ini menunjukkan bahwa tradisi pendidikan berbasis nilai spiritual dan kearifan lokal dapat menjadi sumber penting dalam membangun relasi yang harmonis antara manusia, teknologi, dan keberlanjutan kehidupan di masa depan.

Kata kunci: agensi peserta didik; pendidikan Islam; kesadaran khalifah; *Ngaji diri*; pendidikan berkelanjutan

ABSTRACT

The rapid expansion of generative artificial intelligence (AI) has transformed educational practices worldwide, shifting the central challenge of learning from access to information toward the cultivation of meaningful human agency. While contemporary discussions of student agency often emphasize autonomy and learner choice, such

perspectives frequently overlook ethical and reflective dimensions necessary for responsible engagement with technology. This conceptual study seeks to reframe student agency within Islamic education by integrating the concept of humans as khalifah with the Sundanese wisdom of ngaji diri as foundations for ethically grounded and reflective learning in the digital age. Employing an integrative literature review, the study synthesizes scholarship on student agency, Islamic educational thought, and cultural studies on reflective self-awareness to construct a conceptual framework responsive to educational challenges posed by generative AI. The analysis suggests that khalifah consciousness situates agency within moral responsibility and stewardship toward society and the environment, while ngaji diri cultivates reflective self-awareness and emotional regulation necessary for sustained learning engagement. Integrating these perspectives reframes agency not merely as personal autonomy but as socially responsible and ethically guided participation in learning and technological environments. The study argues that Islamic education can contribute to sustainable educational futures by nurturing learners capable of intentional, reflective, and responsible use of digital technologies. This framework positions culturally and spiritually grounded educational traditions as valuable resources for shaping harmonious human–technology relationships in rapidly transforming learning environments.

Keywords: *student agency; Islamic education; Khalifah consciousness; Ngaji diri; sustainable education*

INTRODUCTION

The rapid advancement of generative artificial intelligence (AI) has transformed educational landscapes across the globe, reshaping how knowledge is accessed, produced, and evaluated. Students today can generate essays, solve complex problems, summarize readings, and even produce creative works with minimal effort through AI-assisted platforms (Dumbuya, 2024). While these developments promise democratized access to knowledge and enhanced learning efficiency, they simultaneously provoke profound educational concerns. Increasingly, educators observe that the challenge facing education is no longer the scarcity of information but rather students' diminishing capacity to engage intentionally, critically, and responsibly with knowledge (Khan et al., 2024). The central question confronting contemporary education is therefore shifting from *how students access information* to *how students exercise agency in using, interpreting, and acting upon information* in ethically and socially responsible ways.

In many contexts, the rise of generative AI has accelerated tendencies toward cognitive offloading, where learners increasingly delegate thinking processes to digital tools. Tasks that once required sustained reasoning, reflection, and effort can now be automated within seconds. While technological assistance can enhance productivity, overreliance risks weakening essential human capacities such as perseverance, reflective judgment, and intrinsic motivation (Gerlich, 2025). Students may become passive consumers of algorithmically generated outputs rather than active constructors of meaning (Dai, 2025). Consequently, contemporary educational debates increasingly emphasize the importance of cultivating student agency, understood as learners' capacity to intentionally direct their learning processes, regulate their actions, and assume responsibility for educational and life decisions (Kharroubi & ElMediouni, 2024).

Student agency has gained prominence in educational research and policy discussions over the past decade, frequently associated with student-centered learning, self-regulated learning, and learner autonomy (Gupta et al., 2024). Agency is often conceptualized as students' ability to set goals, monitor progress, make decisions, and actively shape learning experiences (Stenalt & Nielsen, 2025; Ponomarioviene & Jakavonyte-Staskuviene, 2025). However, much of the dominant discourse surrounding agency remains rooted in individualistic frameworks emphasizing autonomy and personal choice. While these perspectives provide valuable insights, they often insufficiently address the ethical, spiritual, and communal dimensions of human action, particularly in educational contexts shaped by religious and cultural values. In many societies, agency is not merely about personal independence but about responsible participation within moral and social communities (Zelenkovski et al., 2024; Berg & Verster, 2020).

Within Islamic intellectual and educational traditions, human action has long been understood through the concept of humans as *khalifah* which means vicegerents or stewards entrusted with responsibility on Earth (Rakhmat, 2022). This concept situates human agency within a framework of moral accountability, responsibility, and care for social and environmental harmony. Agency, in this sense, is neither unrestricted autonomy nor mere obedience, but a balanced capacity to act consciously, ethically, and responsibly in managing personal conduct, social

relations, and environmental sustainability. The Qur'anic notion of humans entrusted with responsibility implies that learning, decision-making, and technological engagement must align with broader ethical obligations rather than purely instrumental goals (Raibu & Merican, 2025).

At the same time, Indonesia's diverse cultural traditions preserve local wisdom practices that cultivate reflective self-awareness and ethical conduct long before modern psychological theories emerged. One such example is the Sundanese concept of *ngaji diri*, literally meaning self-reflection or studying oneself. Within Sundanese philosophical traditions, *ngaji diri* emphasizes continuous introspection, humility, emotional regulation, and awareness of one's place within social and natural environments. Individuals are encouraged to understand their intentions, recognize their limitations, and align actions with collective harmony (Nasir et al., 2023; Sjafirah et al., 2024). This reflective orientation fosters disciplined self-regulation and ethical decision-making, qualities closely aligned with contemporary educational concerns about agency and self-regulated learning.

Despite the richness of both Islamic and local cultural traditions, contemporary educational discussions, particularly those addressing digital transformation, often marginalize these perspectives in favor of predominantly Western theoretical frameworks. As educational systems worldwide struggle to respond to AI-driven disruptions, there is growing recognition that sustainable educational futures require not only technological competence but also culturally and spiritually grounded human development (Tan, 2020; Papakostas, 2025). Reconsidering student agency through Islamic and local wisdom lenses therefore offers an opportunity to contribute alternative conceptual foundations for global educational discourse.

The urgency of this reconsideration is further intensified by sustainability challenges facing contemporary societies. Technological acceleration, environmental degradation, and social fragmentation increasingly demand educational approaches that cultivate not only cognitive competence but also ethical responsibility and social awareness (Chen et al., 2025). Educational systems oriented solely toward technical skills risk producing technologically capable yet ethically unanchored individuals. In contrast, education grounded in stewardship

values and reflective self-awareness can support harmonious coexistence between humans, technology, and nature (Fitzpatrick, 2023; Insany et al., 2024). Integrating Islamic concepts of stewardship with local traditions of introspective learning offers pathways toward educational models capable of supporting sustainable and socially responsible futures.

Within this context, Islamic education faces both challenges and opportunities. On one hand, educational institutions must equip learners with competencies necessary to navigate rapidly evolving technological environments. On the other hand, they must preserve ethical and spiritual foundations that guide responsible engagement with such technologies (Juhairiah & Yuwono, 2024). Reframing student agency through concepts embedded within Islamic and local wisdom traditions allows Islamic education to move beyond reactive technological adaptation toward proactive moral and intellectual leadership in shaping educational futures.

This paper argues that student agency in the era of generative AI requires reconceptualization beyond individual autonomy toward ethically grounded, reflective, and socially responsible engagement with learning and technology. Drawing upon Islamic understandings of humans as *khalifah* and Sundanese traditions of *ngaji diri*, the study proposes a conceptual framework that integrates spiritual responsibility and reflective self-awareness as foundations of future-oriented student agency. Rather than positioning technology as the center of educational transformation, this perspective re-centers human intentionality, ethical responsibility, and cultural wisdom as guiding principles for sustainable educational development.

By synthesizing contemporary discussions of agency with Islamic and local wisdom perspectives, this study aims to contribute to broader conversations on Islamic education for sustainable futures. The framework developed seeks to demonstrate how culturally and spiritually grounded educational approaches can support learners in becoming not only competent users of technology but also responsible stewards capable of navigating complex social and technological realities. In doing so, the paper positions Islamic education as an active contributor

to global efforts in shaping harmonious, sustainable, and ethically responsible educational futures in the age of generative artificial intelligence.

METHOD

This study employs a conceptual research design grounded in an integrative literature review (Russell, 2005) to construct a framework for reframing student agency in Islamic education within the context of generative artificial intelligence. Rather than generating new empirical data, the study seeks to synthesize and reinterpret existing theoretical, philosophical, and educational discourses in order to articulate an alternative conceptualization of student agency that integrates Islamic perspectives and local cultural wisdom. Such an approach is appropriate given that the primary aim of the study is theory development and conceptual integration rather than empirical testing.

The literature examined in this study was drawn from three principal domains. The first domain consists of contemporary scholarship on student agency, self-regulated learning, and learner autonomy within educational psychology and educational policy studies. This body of literature provides the conceptual foundation for understanding how agency has been discussed in modern educational contexts, particularly in relation to student-centered learning and future-oriented competencies. The second domain encompasses Islamic intellectual and educational thought related to the concept of humans as *khalifah*, emphasizing moral responsibility, stewardship, and ethical action. Sources in this domain include classical and contemporary interpretations of Islamic educational philosophy as well as scholarly discussions addressing Islamic perspectives on knowledge, responsibility, and human development. The third domain includes cultural and anthropological studies concerning Sundanese local wisdom, particularly the concept of *ngaji diri*, which highlights reflective self-awareness, self-regulation, and harmonious social conduct as foundational elements of personal development.

Literature sources were identified through searches of major academic databases, including Scopus-indexed journals, Google Scholar, and educational policy reports from international organizations addressing digital transformation and future education challenges. Additional sources included academic books and

peer-reviewed articles discussing Islamic education, cultural wisdom traditions in Indonesia, and the educational implications of artificial intelligence. Priority was given to publications that directly addressed agency, ethical responsibility in education, digital transformation, or culturally grounded educational practices. Both global and regional scholarship were included to ensure contextual relevance while maintaining international academic engagement.

The analytical procedure involved thematic synthesis (Thomas & Hardem 2008) and conceptual comparison across the three domains of literature. Initially, key themes and constructs related to student agency and self-regulated learning were identified, focusing on dimensions such as intentionality, responsibility, goal-directed learning, and reflective practice. Subsequently, Islamic conceptualizations of human responsibility as *khalifah* were examined to identify parallel constructs related to moral accountability, stewardship, and purposeful action. In parallel, cultural analyses of *ngaji diri* were reviewed to identify elements of introspection, emotional regulation, humility, and ethical self-awareness embedded within Sundanese traditions.

Following thematic identification, conceptual convergence and divergence across these domains were systematically compared (Naeem et al., 2023). Particular attention was given to areas where contemporary agency discourse overlaps with ethical and reflective dimensions present in Islamic and local wisdom traditions, as well as areas where modern agency frameworks remain limited in addressing moral and communal responsibilities. Through iterative comparison, conceptual links were mapped to construct an integrative understanding of agency that situates learner autonomy within broader ethical and cultural contexts.

The final stage of analysis involved constructing a conceptual framework that synthesizes reflective self-awareness derived from *ngaji diri* with ethical responsibility grounded in the concept of humans as *khalifah*. This framework positions student agency not merely as personal control over learning but as ethically oriented and socially responsible engagement with knowledge and technology. The framework aims to provide a conceptual foundation for educational responses to generative AI that preserve human intentionality and responsibility within rapidly transforming digital environments.

By employing an integrative conceptual approach, the study contributes to ongoing discussions on educational transformation by demonstrating how Islamic and local wisdom traditions can inform contemporary educational theory. Rather than proposing a culturally isolated model, the framework seeks to offer a dialogical contribution to global conversations on education, sustainability, and technological change, particularly within contexts where spiritual and cultural values remain central to educational practice

This study adopts a conceptual and integrative literature review approach to develop a framework for reframing student agency in Islamic education within the context of generative artificial intelligence. Relevant literature was drawn from three main domains: contemporary studies on student agency and self-regulated learning, Islamic educational thought concerning human beings as *khalifah*, and cultural studies on Sundanese wisdom, particularly the concept of *ngaji diri*. Sources included peer-reviewed journal articles, academic books, and international policy and educational reports addressing digital transformation and future learning challenges.

The analysis employed thematic synthesis and conceptual comparison to identify convergences between modern agency discourse and ethical–reflective traditions within Islamic and local wisdom perspectives. Based on this synthesis, an integrative conceptual framework was constructed to articulate student agency as reflective, ethically grounded, and socially responsible engagement in the age of generative AI.

DISCUSSION

The Crisis of Student Agency in The Age of Generative AI

The rapid integration of generative artificial intelligence into educational environments has introduced profound changes in how students access, process, and produce knowledge. Tools capable of generating essays, solving mathematical problems, coding applications, and summarizing complex readings have become readily available, often requiring minimal cognitive effort from users (Gaayathri, 2024; Alali et al., 2024). While such technological advancements promise improved accessibility and learning efficiency, they simultaneously pose new challenges to

the cultivation of student agency. Increasingly, educators observe that students may rely on algorithmic outputs rather than engaging in sustained reflection, reasoning, and knowledge construction processes themselves (Panit, 2025; Goyal, 2025).

This transformation signals a shift in educational concerns. In previous decades, the primary challenge facing learners was access to information and learning resources. Digital technologies initially emerged as solutions to bridge informational gaps (Kiser & Washington, 2015). However, in the era of generative AI, the problem has inverted: students are now confronted with an overwhelming abundance of instantly produced knowledge, often reducing the necessity for deliberate cognitive engagement. The risk is not merely academic dishonesty or superficial learning, but a gradual erosion of intentional learning habits and responsibility toward intellectual effort (Mahajan, 2025).

Central to this concern is the phenomenon commonly described as cognitive offloading, in which individuals increasingly delegate mental tasks to technological systems (Gerlich, 2025; Turner, 2022). When learners rely extensively on AI tools to generate responses, summarize texts, or solve tasks, opportunities for cognitive struggle, which is an essential component of meaningful learning, diminish. Struggle, reflection, and revision processes play crucial roles in strengthening problem-solving capacity and long-term understanding (Coulson & Harvey, 2013; Mufliva et al., 2024). When these processes are bypassed, learners may complete tasks efficiently but fail to internalize knowledge or develop independent reasoning skills.

Moreover, generative AI challenges traditional notions of authorship and ownership of learning. When outputs are partially or fully machine-generated, the boundary between students' own intellectual effort and technological assistance becomes blurred. Students may submit polished assignments without fully understanding the material, thereby weakening their sense of accountability and ownership over learning outcomes. Over time, this pattern risks producing learners who succeed academically yet remain dependent on technological mediation for intellectual performance (Do et al., 2025; Ryan et al., 2025).

Another emerging issue concerns motivational shifts in digital learning environments. Instant solutions offered by AI tools may reduce students' tolerance

for effortful problem-solving, encouraging preference for speed over depth (Arslanova et al., 2024). Learning activities that require patience, exploration, and sustained attention may appear inefficient compared to automated alternatives. Consequently, perseverance and persistence as key components of agency may weaken, particularly among learners already facing motivational challenges.

However, it is important to note that generative AI itself is not inherently detrimental to education. When used responsibly, AI can support personalized learning, assist with feedback, and enable creative exploration (Kanta, 2023). The critical issue lies not in technology itself but in how learners engage with it. The educational challenge is therefore not technological replacement of learning but cultivating learners capable of exercising judgment, responsibility, and intentional decision-making when interacting with intelligent systems.

These developments suggest that contemporary education must move beyond merely integrating digital technologies toward strengthening human capacities that technology cannot replace. Agency becomes increasingly essential in enabling learners to decide when to rely on technological assistance and when to engage independently in learning processes. Students must develop not only cognitive competence but also ethical and reflective awareness guiding their technological engagement.

Yet prevailing discussions of student agency often frame it primarily as individual autonomy or freedom of choice in learning contexts (Nieminen et al., 2021). Such interpretations risk overlooking moral, social, and spiritual dimensions of human action, dimensions that become increasingly important when technological power expands. Agency in technologically mediated environments requires more than personal independence; it demands ethical responsibility and reflective self-awareness to ensure that technological tools serve human development rather than replace it (Morrison, 2020).

This limitation highlights the need to revisit and expand conceptual understandings of student agency, particularly within educational contexts grounded in religious and cultural traditions. Islamic educational thought and local wisdom traditions offer perspectives that situate human action within broader ethical and communal responsibilities. These perspectives may provide conceptual

resources for reframing agency in ways that address contemporary technological challenges while sustaining human intentionality and responsibility.

The following discussion therefore explores how Islamic conceptions of humans as *khalifah* and Sundanese traditions of *ngaji diri* offer complementary foundations for rearticulating student agency in the era of generative AI. By situating agency within frameworks of stewardship, ethical accountability, and reflective self-awareness, these traditions may contribute toward educational models capable of sustaining meaningful human engagement in increasingly automated learning environments.

***Khalifah* Consciousness and Human Responsibility in Islamic Education**

In response to contemporary concerns regarding the erosion of intentional learning and responsible engagement in technologically mediated environments, Islamic intellectual tradition offers a foundational perspective on human agency through the concept of humans as *khalifah*, or stewards entrusted with responsibility on Earth. Unlike modern interpretations of agency that frequently emphasize personal autonomy, the concept of *khalifah* situates human action within a framework of ethical accountability and collective responsibility (Malik, 2025; Ismail & Berghout, 2024). Human freedom, in this perspective, is inseparable from moral obligation and stewardship toward both society and the natural environment.

The Qur'anic narrative describing humanity's appointment as *khalifah* signifies a trust (*amanah*) bestowed upon humans, implying both capability and responsibility (Herijanto, 2022). Humans are endowed with intellectual and moral capacities enabling them to manage resources, develop knowledge, and cultivate civilization, yet these capacities must be exercised with awareness of ethical consequences. Education, therefore, is not merely a process of skill acquisition but a cultivation of consciousness regarding how knowledge and power are used. Within this framework, learning becomes an ethical endeavor directed toward beneficial action rather than individual achievement alone.

From an educational standpoint, *khalifah consciousness* emphasizes intentionality in action (Rakhmat, 2022), aligning closely with contemporary discussions of agency that highlight purposeful learning and goal orientation.

However, Islamic perspectives extend this intentionality beyond personal success toward accountability before God and responsibility toward creation. Students are encouraged to reflect not only on what they achieve but also on how their actions contribute to communal well-being and environmental sustainability (Hajar, 2024). Such orientation offers an ethical anchor for educational agency, particularly relevant in contexts where technological advancement risks prioritizing efficiency over responsibility.

In the era of generative AI, where technological tools can rapidly amplify human capabilities, the moral dimension of agency becomes increasingly significant. AI systems can generate information, influence decisions, and shape social behavior at unprecedented scales. Without ethical grounding, learners may use technology primarily for convenience or competitive advantage rather than for constructive societal contribution (Keirl, 1998). The concept of humans as *khalifah* counters this tendency by emphasizing stewardship and responsibility as central components of human action. Technological competence, in this sense, must be accompanied by moral discernment regarding the consequences of technological use (Ramirez-Polo & Vargas-Sierra, 2023; Freeman, 2007).

Moreover, Islamic educational philosophy traditionally views knowledge (*ilm*) as inseparable from ethical formation (*adab*). Classical scholars emphasized that knowledge without proper conduct could lead to harm rather than benefit (Putra et al., 2024; Hesova, 2012). This perspective resonates strongly with contemporary concerns about technologically skilled individuals lacking ethical orientation. Generative AI intensifies this challenge, making it possible for learners to produce sophisticated outputs without corresponding development of intellectual discipline or moral awareness. Reintroducing the ethical dimension of learning through *khalifah consciousness* helps reposition education as a process of character formation alongside intellectual development.

Another dimension relevant to agency is the balance between human effort and reliance upon divine guidance. Islamic teachings emphasize both personal striving (*ikhtiar*) and trust in God (*tawakkul*), encouraging learners to exert effort while recognizing human limitations (Abubakar & Arsyad, 2024). This balance cultivates resilience and perseverance, qualities essential for sustained agency in

learning. Students are encouraged to persist in learning efforts even when immediate results are not visible, countering tendencies toward instant gratification often reinforced by digital technologies.

Furthermore, stewardship consciousness promotes sustainable engagement with natural and social environments. Educational systems increasingly recognize sustainability as a critical dimension of future learning (Martins et al., 2006; Tiwary, 2023). Islamic teachings linking human responsibility with environmental care provide ethical grounding for sustainability-oriented education (Ali & Agushi, 2024). Agency, in this sense, extends beyond individual achievement to include responsibility for maintaining ecological balance and social harmony.

Importantly, *khalifah consciousness* does not negate autonomy but reframes it within ethical boundaries. Learners remain active decision-makers, yet their decisions are guided by responsibility toward others and the environment (Rakhmat, 2022). Agency becomes relational rather than purely individualistic, reflecting awareness that personal actions have broader consequences. Such perspective aligns with growing educational discussions emphasizing collaborative learning and social responsibility as components of twenty-first-century competencies (Tight, 2020; Scott, 2015).

In Islamic educational settings, integrating *khalifah consciousness* into learning practices can encourage students to view technological tools as instruments for service rather than merely personal advancement. AI-assisted learning can thus become a means of enhancing problem-solving capacity for social and environmental challenges rather than simply optimizing academic performance. Education guided by stewardship values fosters learners capable of navigating digital environments responsibly while maintaining ethical commitments.

However, ethical responsibility alone does not automatically translate into effective self-regulation in learning contexts. While *khalifah consciousness* provides moral direction, learners still require reflective self-awareness to manage emotions, motivations, and decisions in everyday learning situations. Ethical intention must be accompanied by practical self-understanding to guide consistent action (Caldwell, 2009). For this reason, integrating spiritual responsibility with cultural practices of introspective learning becomes crucial.

The following section therefore examines the Sundanese tradition of *ngaji diri* as a cultural practice emphasizing reflective self-awareness and emotional regulation. When combined with stewardship consciousness, such reflective traditions provide practical mechanisms for cultivating student agency capable of sustaining meaningful learning engagement in technologically saturated environments.

***Ngaji Diri* as Reflective Agency in Sundanese Wisdom**

While *khalifah consciousness* offers an ethical and spiritual foundation for responsible human action (Rakhmat, 2022), effective agency in educational contexts also requires practical capacities for self-awareness and emotional regulation (Hadi & Gharaibeh, 2023; Small, 2017). Ethical intention alone does not automatically translate into consistent behavior; learners must also understand their own motivations, limitations, and responses to challenges. (Sohail & Akram, 2025) In this regard, local wisdom traditions often preserve practices that cultivate reflective awareness as a foundation for responsible action. One such tradition found within Sundanese cultural philosophy is the practice known as *ngaji diri*, which may be understood as the continuous effort to study, understand, and refine oneself (Nugraha et al., 2021; Susanti & Sukaesih, 2024).

In Sundanese cultural understanding, *ngaji diri* refers not merely to intellectual reflection but to an ongoing process of introspection that shapes personal conduct and social interaction. Individuals are encouraged to examine their intentions, recognize emotional impulses, and align actions with communal harmony. This reflective orientation emphasizes humility, self-control, and awareness of one's role within broader social and natural environments. Rather than promoting self-centered autonomy, *ngaji diri* cultivates self-understanding as a prerequisite for harmonious living with others (Umam, 2016).

From an educational perspective, this tradition resonates strongly with contemporary discussions of self-regulated learning and metacognitive awareness. Modern educational psychology highlights learners' ability to plan, monitor, and evaluate their own learning processes as critical for academic success (Isaacson & Fujita, 2006; Smadi et al., 2024). However, such frameworks often emphasize cognitive strategies while giving less attention to emotional and ethical self-

regulation. The practice of *ngaji diri* expands this understanding by integrating emotional awareness and moral sensitivity into reflective learning processes.

In technologically saturated learning environments, reflective self-awareness becomes increasingly crucial. Generative AI tools provide immediate answers and solutions, often reducing opportunities for learners to struggle productively with learning tasks. Without reflective awareness, students may choose convenience over understanding, submitting AI-generated outputs without engaging deeply with content. In such circumstances, learners' agency weakens not because technology replaces intelligence, but because learners fail to examine their own learning intentions and responsibilities (Hase, 2020; Brod et al., 2023).

The practice of *ngaji diri* encourages individuals to pause and reflect before acting, fostering deliberation rather than impulsive decision-making (Umam, 2016). Applied to educational contexts, this reflective stance enables students to question how and why they use technological tools. Instead of asking merely whether AI can complete a task, learners guided by reflective awareness may ask whether reliance on technology contributes to genuine understanding or merely produces superficial completion. Such questioning is central to sustaining meaningful agency within digital learning environments.

Another important dimension of *ngaji diri* concerns emotional regulation. Learning processes inevitably involve frustration, confusion, and failure. Students who lack emotional awareness may quickly abandon challenging tasks or seek shortcuts through technological assistance. In contrast, reflective practices encourage learners to recognize emotional responses, tolerate temporary discomfort, and persist through difficulties. This capacity aligns closely with psychological constructs such as persistence and resilience (Jadmiko et al., 2024; White et al., 2024), both essential components of student agency.

Furthermore, *ngaji diri* promotes humility and openness to continuous self-improvement. Within Sundanese ethical traditions, recognizing one's limitations is considered a strength rather than a weakness (Fajrussalam & Hasanah, 2018). Such humility supports collaborative learning environments where students remain open to feedback and willing to revise understanding (Dooley & Bamford, 2018). In contrast, technologically assisted environments sometimes encourage performance

orientation, where learners focus primarily on producing correct answers rather than developing deeper understanding (Dolmans et al., 2016; Dale, 2001). Reflective traditions counterbalance this tendency by emphasizing growth through self-examination.

Importantly, *ngaji diri* also situates personal development within communal contexts. Self-reflection is not pursued solely for individual success but for maintaining social harmony and respectful interaction. Agency therefore becomes relational rather than purely individual, aligning with contemporary educational calls for collaborative competence and social responsibility. Students learn to evaluate how their actions affect peers, communities, and environments, reinforcing ethical dimensions of learning introduced earlier through *khalifah consciousness*.

The relevance of *ngaji diri* becomes particularly apparent in multicultural and digitally interconnected societies, where learners constantly encounter diverse perspectives and rapidly changing information landscapes (Raju, 2016; Kumi-Yeboah et al., 2020). Reflective awareness enables students to navigate such complexity without losing moral orientation or emotional balance. By encouraging continuous self-examination, learners develop the capacity to respond thoughtfully rather than react impulsively to digital stimuli and social pressures.

However, reflective awareness alone cannot fully address the ethical responsibilities accompanying technological power. Reflection requires moral direction to guide action, just as ethical intention requires reflective capacity to translate values into behavior. For this reason, integrating reflective traditions such as *ngaji diri* with stewardship values embedded within *khalifah consciousness* provides a more comprehensive foundation for agency in contemporary education.

The next section therefore synthesizes these two traditions to construct an integrative conceptual framework for student agency capable of addressing the challenges posed by generative AI. By combining ethical stewardship with reflective self-awareness, Islamic education can articulate a model of agency that sustains meaningful learning, responsible technological engagement, and harmonious coexistence in rapidly transforming educational landscapes.

CONCLUSION

The emergence of generative artificial intelligence has transformed educational environments in ways that extend beyond technological innovation, prompting fundamental questions about the role of human agency in learning. As access to knowledge becomes increasingly automated, the central educational challenge shifts from information acquisition toward cultivating learners capable of intentional, reflective, and responsible engagement with knowledge and technology. Without deliberate educational responses, the convenience offered by intelligent systems risks weakening students' motivation, self-regulation, and ownership of learning processes, thereby undermining the very capacities education seeks to develop.

This study has argued that prevailing discussions of student agency, often framed primarily in terms of individual autonomy and choice, require reconceptualization in light of contemporary technological realities. Agency in the era of generative AI must extend beyond personal control over learning toward ethically grounded and socially responsible action. By drawing upon Islamic understandings of humans as *khalifah* and Sundanese traditions of *ngaji diri*, this paper has proposed a conceptual framework that situates agency within intertwined dimensions of moral responsibility and reflective self-awareness.

The concept of humans as *khalifah* provides an ethical foundation that positions learning as part of a broader stewardship responsibility toward society and the environment. Knowledge and technological competence are thus understood not merely as instruments for personal success but as trusts requiring responsible and beneficial application. Within educational contexts, this perspective encourages learners to view technological tools, including AI systems, as means for contributing to collective well-being rather than solely enhancing individual performance.

Complementing this ethical orientation, the practice of *ngaji diri* offers practical mechanisms for cultivating reflective awareness and emotional regulation necessary for sustained agency. By encouraging continuous introspection, humility, and alignment between intention and action, this tradition supports learners in managing motivations, confronting learning challenges, and making deliberate

decisions regarding technological engagement. Reflection becomes a bridge translating ethical intention into consistent learning behavior.

The integration of stewardship consciousness and reflective self-awareness thus reframes student agency as ethically guided and socially embedded engagement with learning and technology. Rather than positioning learners as isolated decision-makers, this framework emphasizes relational responsibility, communal harmony, and sustainability. Such orientation aligns closely with contemporary calls for education that supports not only cognitive competence but also ethical and environmental responsibility in facing global challenges.

For Islamic education, this reconceptualization presents both an opportunity and a responsibility. Educational institutions are challenged to move beyond reactive adaptation to technological change toward proactive cultivation of morally grounded and reflective learners. Integrating ethical stewardship and reflective practices into curriculum, pedagogy, and counseling approaches can support students in navigating digital environments responsibly while preserving human intentionality and dignity in learning processes.

More broadly, this study contributes to global educational discourse by demonstrating that culturally and spiritually grounded traditions can offer valuable conceptual resources for addressing contemporary technological challenges. Rather than viewing local wisdom and religious perspectives as obstacles to modernization, this framework positions them as vital sources of insight for shaping sustainable educational futures.

Future research may extend this conceptual framework through empirical investigation examining how stewardship-oriented and reflective learning practices influence student agency across diverse educational contexts. Such studies may further explore how Islamic and local wisdom traditions can inform practical pedagogical strategies capable of sustaining meaningful learning engagement in increasingly automated environments.

Ultimately, education in the age of generative AI must reaffirm that technology serves human development, not the reverse. By grounding agency in ethical responsibility and reflective self-awareness, learners can remain active

stewards of knowledge and society, capable of engaging technological advancements while sustaining harmonious and sustainable futures.

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