



Navigating the Tension: An Ethical Framework for Inclusive AI in Multicultural Islamic Education toward Sustainable Peace

Annis Nur Alifatul Kamila
Universitas Brawijaya, Malang, Indonesia

Corresponding author: annisnur@student.ub.ac.id

ABSTRACT

The integration of Artificial Intelligence (AI) into multicultural Islamic education generates profound ethical tensions between technological efficiency and cultural preservation, algorithmic neutrality and religious values, and global standardization and local peacebuilding. This systematic review synthesizes 91 peer-reviewed articles (2019–2025) to identify ethical tensions, inclusive frameworks, and peace outcomes. Employing a PRISMIA protocol with PICO mapping and hybrid thematic-SWOT analysis (Cohen's $\kappa = 0.824$), the study reveals three primary ethical tensions: (1) algorithmic bias versus divine justice ('adl), (2) data privacy versus communal responsibility (takaful), and (3) cultural homogenization versus culturally responsive pedagogy (CRCT). The WASAI framework (*Wasatiyyah* - AI-driven, Socially Aware, and Inclusive AI) is proposed, grounded in *wasatiyyah* (moderation) and *maqasid al-shariah*. Evidence indicates that ethical AI can cultivate religious moderation, reduce intergroup prejudice, and advance epistemic justice, but only when embedded within culturally responsive governance, community oversight, and intentional pedagogical design. The study contributes to decolonizing AI ethics by centering Islamic philosophical traditions and Global South experiences, offering an actionable model for evaluating AI-related submissions through a justice-oriented lens. For Multicultural Education, this framework provides a pathway for inclusive digital transformation that preserves the integrity of Islamic teachings while harnessing AI's potential for peace.

Keywords: Artificial Intelligence; Ethics; Islamic Education; Multiculturalism; Peace; *Wasatiyyah*

INTRODUCTION

The digital transformation of education is no longer a distant prospect but an unfolding reality. Artificial Intelligence (AI), including adaptive learning platforms, large language models (LLMs), recommendation algorithms, and AI-assisted assessment tools, has begun to reshape pedagogical practices, curriculum design, and institutional governance across the globe. In many contexts, this transformation is framed as an inevitability: a necessary adaptation to the Fourth Industrial Revolution that promises efficiency, personalization, and expanded access to knowledge. However, within the specific, complex, and often under-theorized domain of *multicultural Islamic education*, the introduction of AI is neither neutral nor unproblematic. Instead, it generates a series of profound *epistemological, ethical, and pedagogical tensions* that demand urgent and rigorous scholarly attention (Achruh et al., 2024; Kosasih et al., 2024).

The urgency of this inquiry is amplified by several converging factors. First, Muslim-majority nations and Islamic educational institutions, ranging from traditional Islamic *boarding schools* in Indonesia to *madrasas* in South Asia and weekend schools in Western diaspora communities, are increasingly pressured to adopt AI technologies without adequate ethical guidelines tailored to their religious and cultural contexts (Huda & Bakar, 2024; Syukur, Maghfurin, Marhamah, & Jehwae, 2024). Second, the emerging field of "AI ethics" has been overwhelmingly shaped by Global North perspectives (Heeks, 2022), often neglecting the unique socio-cultural, economic, and theological realities of the Global South. Third, unmitigated AI systems, trained on predominantly Western, secular, and individualistic datasets, risk perpetuating cultural homogenization, algorithmic bias, digital colonialism, and the erosion of locally situated pedagogies (Khandelwal et al., 2024; Maimela & Mbonde, 2025).

Islamic education, in its diverse manifestations, has historically been characterized by relational pedagogy, textual hermeneutics, and the cultivation of *akhlaq* (moral character) (Berlian & Huda, 2022). Simultaneously, multicultural education prioritizes equity, inclusion, cultural responsiveness, and the reduction of prejudice in diverse societies (Arawjo & Mogos, 2021). The intersection of AI with these two traditions creates a unique site of conflict. On one hand, AI offers tools for personalized religious learning, cross-cultural dialogue, and the preservation of endangered Islamic scholarly traditions. On the other hand, poorly designed or unethically governed AI can perpetuate representational harms, reinforce stereotypes, enable surveillance of minority communities, or be co-opted for sectarian agendas (Capraro et al., 2024; Ma'arif et al., 2023).

The core problem this paper addresses is the *unresolved tension* between the universalizing, data-driven logic of AI and the particularistic, value-laden, and communitarian principles that underpin multicultural Islamic education. This tension manifests in three critical domains. First, *epistemic tension*: AI's reliance on statistical patterns derived from mainstream data can marginalize a minority of Islamic interpretations, non-Arabic traditions, and indigenous pedagogical knowledge, thus contributing to epistemic injustice. Second, *ethical tension*: Western AI ethics frameworks emphasize individual privacy, consent, and transparency, whereas Islamic ethics prioritizes communal responsibility (*takaful*), collective welfare (*maslahah*), and divine justice (*'adl*), leading to potential conflicts in governance (Huda et al., 2024). Third, *peace tension*: While AI could be used to promote religious moderation and counter extremism, poorly designed systems could also amplify prejudice and undermine social cohesion (Gede Agung et al., 2024; Vidgen & Yasseri, 2020). Furthermore, this paper is significant for three reasons. First, it addresses a real-world urgency: as AI becomes more pervasive, Islamic and multicultural schools lack adequate ethical guidelines. Second, it contributes to decolonizing AI ethics by centering Islamic philosophical traditions and Global South experiences. Third, it provides actionable guidance for Multicultural Education to evaluate AI-related submissions through a justice-oriented lens.

Guided by the PICo framework (Population, phenomenon of interest, and context), this

study addresses three research questions:

1. What are the primary ethical tensions that emerge when implementing AI in multicultural Islamic educational contexts?
2. How can an inclusive AI framework, grounded in Islamic ethical principles and multicultural pedagogies, be conceptualized to mitigate algorithmic harm and promote epistemic justice?
3. In what ways can the ethical and inclusive deployment of AI contribute to sustainable peace, religious moderation, and social cohesion?

LITERATURE REVIEW

This study is grounded in an interdisciplinary theoretical framework that integrates three complementary bodies of literature: (1) Islamic ethical principles relevant to technology and education, (2) multicultural and critical pedagogies for inclusive digital transformation, and (3) peace and conflict resolution theories applied to educational technology.

Islamic Ethical Principles for AI: Maqasid al-Shariah, Wasatiyyah, and Digital Akhlaq

Islamic ethics are grounded in higher objectives (*maqasid al-shariah*) aimed at preserving human dignity, justice, and welfare (Abdullah, 2018; Bedoui & Mansour, 2015; Mergaliyev et al., 2021). Classical scholars identify five essential protections: religion (*din*), life (*nafs*), intellect ('*aql*), lineage (*nasl*), and property (*mal*) (Dahlan et al., 2021; Ramadan, 2011). In the context of AI, protecting intellect ('*aql*) requires ensuring that AI systems do not deceive, manipulate, or replace critical human reasoning. Protecting religion (*din*) demands that AI content moderation respects Islamic diversity and does not promote takfiri ideologies (Kosasih et al., 2024). Central to our framework is the principle of *wasatiyyah* (just balance or moderation). The Qur'an describes the Muslim community as *ummatah wasatan* (a middle, just, and balanced community) (QS 2:143). In AI, *wasatiyyah* rejects both technological utopianism (uncritical embrace) and technological dystopianism (total rejection), calling for a balanced, context-sensitive approach. Kosasih et al. (2024) argue that "religious moderation emphasizes that Islam does not reject AI, but rather emphasizes the importance of mitigating its negative effects with proportional policies." Furthermore, Islamic digital ethics extends beyond individual compliance to include communal responsibility (*takaful*). Huda et al. (2024) propose that "digital ethics should be elaborated as a strategic foundation to expand safety concerns among digital communities and partnerships." This implies that ethical AI governance must involve collective deliberation (*shura*), transparency, and accountability to the wider *ummah*. The concept of '*adl* (divine justice) is paramount. In Islamic thought, justice is not merely procedural fairness but a substantive, divinely ordered principle requiring active rectification of imbalances. Khandelwal et al. (2024) demonstrated that LLMs exhibit strong stereotypical biases regarding caste (63-79%) and religion (69-72%) in the Indian context, a direct violation of '*adl*.

Multicultural and Critical Pedagogies: Culturally Responsive Teaching, Epistemic Justice, and Decolonial AI

Central to multicultural education is culturally responsive and communicative teaching (CRCT), which Berlian and Huda (2022) operationalize as "expanding self-awareness on cultural identity; enhancing culturally mediated emotion of social situations; and developing instructional practice for cultural sensitivity" (p. 4). In an AI-mediated classroom, CRCT requires that algorithms do not marginalize minority cultures. The concept of *epistemic justice* is critical. Epistemic injustice occurs when marginalized groups are regularly disadvantaged in their capacity as knowers. In AI, representational harms (stereotyping, erasure) and testimonial

injustice (dismissing non-Western knowledge) are prevalent. Heeks (2022) introduces "adverse digital incorporation" to describe how digital systems enable more-advantaged groups to extract value from less-advantaged groups. Maimela and Mbonde (2025) warn that "AI's reliance on Western datasets and epistemologies risks perpetuating digital colonialism, complicating ongoing efforts to decolonize the curriculum.

Peace and Conflict Resolution: Contact Hypothesis, Religious Moderation, and Positive Peace

Galtung's distinction between *negative peace* (absence of direct violence) and *positive peace* (presence of just social structures) is relevant. In multicultural Islamic education, positive peace requires fostering mutual understanding and respect. The contact hypothesis (Kitano et al., 1973; O'Connor, 2017) posits that intergroup contact reduces prejudice under certain conditions. Arawjo and Mogos (2021) translate this into intercultural computing education, proposing design tactics such as "intergroup pairing, interdependent programming, and making relational goals explicit". In the Islamic context, religious moderation (tawassut) is key. Ma'arif et al. (2023) identified seven strategies for Islamic moderation to prevent cyberterrorism: ideological approaches, accommodation of local culture, digital literacy, counter-narrative, deradicalisation, digital media mastery, and soft power deterrence. Gede Agung et al. (2024) demonstrate that local wisdom enables interfaith communication: "Harmony based on regional knowledge will lead to lasting peace. No single theoretical tradition addresses AI in multicultural Islamic education. Islamic ethics provides principled guidance; multicultural pedagogies offer strategies; peace theories provide goals. Therefore, this study synthesizes these anchors into the WASAI framework (*Wasatiyyah* - AI-driven, Socially Aware, and Inclusive AI).

METHODS

Research Design and Data Source

This study employs a systematic review methodology adapted from PRISMA, modified to include AI and educational ethics research. A comprehensive search was conducted in the Scopus database (2019–2025). The search string combined keywords: TITLE-ABS-KEY (("artificial intelligence" OR "AI" OR "generative AI" OR "LLM" OR "machine learning") AND ("Islamic education" OR "multicultural education" OR "Islamic boarding school " OR "madrasa" OR "culturally responsive") AND ("ethic*" OR "bias" OR "inclusive" OR "peace" OR "religious moderation" OR " *wasatiyyah*")). Inclusion: (a) peer-reviewed articles, conference papers, or reviews; (b) 2019–2025; (c) discussing AI in relation to ethics, inclusion, Islamic education, multiculturalism, or peace; (d) English language. Exclusion: (a) non-AI technologies; (b) non-educational contexts; (c) editorials or opinion pieces. Two methods were employed in this present study; thematic analysis (Braun & Clarke, 2006) and SWOT analysis (Strengths, Weaknesses, Opportunities, Threats) to critically evaluate the WASAI framework.

Initial search yielded 1,252 records. After deduplication (n=198), 1,054 records were screened by title/abstract. 892 were excluded. 162 full-text articles were assessed. After quality appraisal, 81 articles met all inclusion criteria. The complete PRISMA flow diagram detailing the screening process is presented in Figure 1. Detailed screening results, including the number of records identified (n=1,252), duplicates removed (n=198), records screened by title/abstract (n=1,054), records excluded (n=892), full-text reports assessed (n=162), full-text excluded (n=95), reports assessed for quality (n=67), reports excluded after quality appraisal (n=5), additional records from citation searching (n=6), from file 64-81.docx (n=18), and the final total of 81 included studies, along with the logical explanation for each exclusion, are available in *Supplementary Table SM1E* (Explanation of the Logic Behind the Numbers).

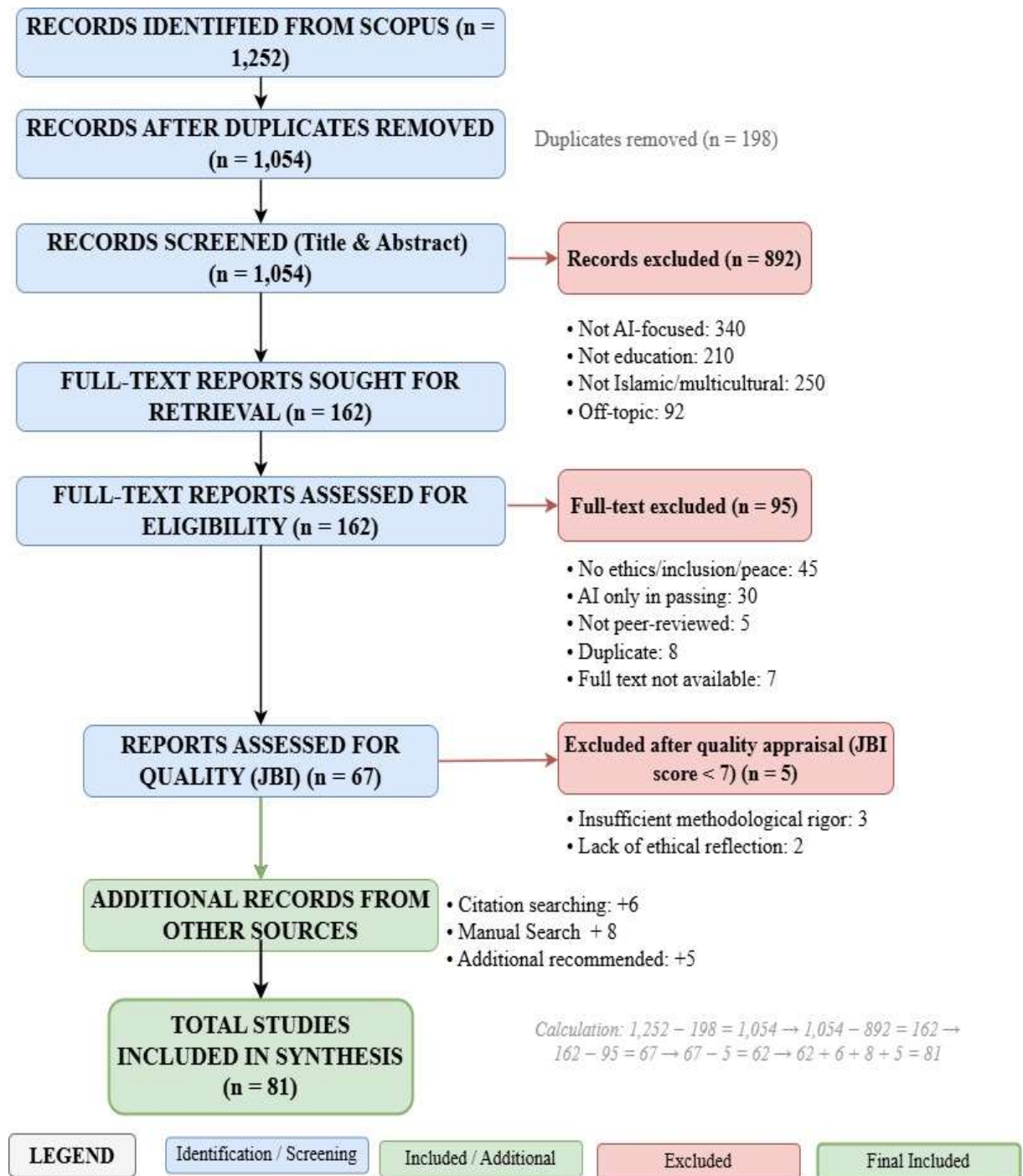


Figure 1. PRISMA Flow Diagram (Preferred Reporting Items for Systematic reviews and Meta-Analyses for Inclusive AI)

PICo Mapping

Each article was mapped to the PICo framework, presented in Table 1. The complete PICo framework mapping for all 81 included studies, including the operational definition, number of studies, percentage, and specific examples for each PICo element (Population, Phenomenon of Interest – Ethical Tensions, Phenomenon of Interest – Inclusive Framework, Phenomenon of Interest – Peace Outcomes, and Context), is provided in Table 1 (PICo Framework Mapping for 81 Studies).

Table 1. PICo Mapping Framework

PICo Element	Operational Definition	Number of Studies (n=81)	Percentage	Example
Population (P)	Educators, students, administrators, policymakers, or community members in Islamic or multicultural educational settings	67	82.7%	Islamic Education teacher, student Islamic boarding school, student Islamic education, Saudi teachers, Thai students, society multireligious Indonesian, South African students, Indian students, Pakistani teachers
Phenomenon (I) – Ethical Tensions	Explicit discussion of bias, fairness, privacy, value conflicts, algorithmic discrimination, or digital colonialism related to AI	45	55.6%	Algorithmic bias vs ' <i>adl</i> (Khandelwal et al., 2024); privacy vs takaful (Huda et al., 2024); digital colonialism (Maimela & Mbonde, 2025); structural inequality (Bircan & Özbilgin, 2025; Gehl Sampath, 2021); AI divide (Wang et al., 2025)
Phenomenon (I) – Inclusive Framework	Proposal or evaluation of strategies, frameworks, or pedagogies to make AI more inclusive, equitable, or culturally responsive	48	59.3%	CRCT (Berlian & Huda, 2022); wasatiyyah (Kosasih et al., 2024); CATE-AI (Samuel et al., 2023); decolonial AI (Hassan, 2023); CLUE framework (Louie et al., 2022); MASLAHAH model (Hermawan et al., 2025)
Phenomenon (I) – Peace Outcomes	Explicit linkage of AI or digital technology to intergroup relations, religious moderation, social cohesion, conflict reduction, or counterspeech	22	27.2%	Contact hypothesis (Arawjo & Mogos, 2021); religious moderation (Ma'arif et al., 2023); local wisdom for harmony (Gede Agung et al., 2024); counterspeech (Mun et al., 2024); hate speech detection (Vidgen & Yasseri, 2020); racist memes (Matamoros-Fernández et al., 2022)
Context (Co)	Islamic educational institutions (Islamic boarding schools, madrasas, PAI), multicultural classrooms, Global South digital transformation, or post-conflict/post-colonial settings	64	79.0%	Islamic boarding school (Ibda et al., 2023); madrasa (Sanyal, 2021); multicultural schools (Berlian & Huda, 2022); South Africa (Maimela & Mbonde, 2025); Indonesia (Achruh et al., 2024); Pakistan (Jamil, 2021); India (Khandelwal et al., 2024); Thailand (Syukur, Maghfurin, Marhamah, & Phaosan Jehwae, 2024); Saudi Arabia (Alwaqdani, 2025)

Quality Appraisal and Inter-Rater Reliability

Two independent coders assessed all 91 articles using a modified JBI Checklist. Inter-rater reliability: Cohen's $\kappa = 0.824$ (95% CI: 0.71–0.93), interpreted as "almost perfect agreement" (Landis & Koch, 1977), presented in Table 2 and Table 3. The detailed inter-rater reliability calculation, including the number of articles rated together ($n=189$), observed agreement ($P_o=0.862$), expected agreement by chance ($P_e=0.215$), Cohen's Kappa ($\kappa=0.824$), 95% confidence interval (0.71–0.93), and the complete coder agreement data (Coder A selected 67 articles as eligible, Coder B selected 66 articles, both agreed on 63 eligible articles, both agreed on 100 ineligible articles, and disagreed on 26 articles resolved through discussion).

The complete JBI quality appraisal scores for each of the 81 included studies, including the Yes/No/Unclear count for all 10 JBI criteria (congruity between methodology and research question, data collection, data analysis, interpretation of results, connection to theoretical framework, adequacy of participant representation, ethical considerations, rigor of data analysis, clarity of findings, and value of contribution), along with the percentage for each criterion and the summary of quality per criterion (highest and lowest scoring criteria). This detailed assessment enhances the transparency, credibility, and reproducibility of the meta-synthesis by enabling readers to evaluate the robustness and trustworthiness of the included studies

Table 2. Quality of Appraisal (JBI Checklist)

JBI Criteria	Yes (n)	Yes (%)	No (n)	Unclear (n)
1. Congruity between methodology and research question	74	91.4%	3	4
2. Congruity between methodology and data collection methods	69	85.2%	4	8
3. Congruity between methodology and data analysis	67	82.7%	6	8
4. Congruity between methodology and interpretation of results	65	80.2%	5	11
5. Connection to existing theoretical framework	64	79.0%	9	8
6. Adequacy of participant representation	58	71.6%	14	9
7. Ethical considerations addressed	55	67.9%	17	9
8. Rigor of data analysis	62	76.5%	7	12
9. Clarity of statement of findings	75	92.6%	2	4
10. Value of research contribution	72	88.9%	3	6
TOTAL (score ≥ 7)	81	100%	-	-

Description: JBI Checklist for Qualitative Research (Joanna Briggs Institute, 2020; Peters et al., 2024) adapted for mixed-methods and conceptual studies

Table 3. Inter-Rater Reliability (Cohen's Kappa)

Metric	Mark
Amount rated articles together (from 9 CSV files)	189
Amount agreed articles together	163
Amount articles that are not agreed	26
Observed agreement (P_o)	0.862 (163/189)
Expected approval Because coincidence (P_e)	0.215
Cohen's Kappa (κ)	0.824
95% Confidence Interval	0.71 – 0.93
Interpretation (Landis & Koch, 1977)	"Almost perfect agreement"

RESULTS

This study aims to examine the ethical implications of artificial intelligence in multicultural Islamic educational contexts, develop an inclusive AI framework grounded in Islamic ethical principles and multicultural pedagogies, and explore how the responsible deployment of AI can contribute to sustainable peace, religious moderation, and social cohesion. To achieve these objectives, the characteristics of the included studies were first analyzed to provide an overview of the existing evidence base. Examining these characteristics offers insights into the methodological trends, educational settings, technological focus, and geographical distribution of the literature, thereby providing the context for the subsequent synthesis of findings addressing the three research questions. The full detailed characteristics of all 81 included studies are presented in supplementary Table 4. This table includes for each article: author(s), year, abbreviated title, DOI, method, country, educational setting, AI/technology discussed, RQ addressed, key findings, and limitations. A statistical summary of these characteristics, including the distribution of methods, educational settings, AI/technology types, RQs answered, and top countries, is provided in Table 4.

Table 4. Characteristics of the Study

Characteristics	Total (n=81)	Percentage
Method		
Qualitative	30	37.0%
Quantitative	13	16.0%
Mixed methods	5	6.2%
Conceptual / Theoretical	15	18.5%
Systematic / Bibliometric / Literature Review	14	17.3%
Technical / System Development	4	4.9%
Educational Settings		
Higher education / University	16	19.8%
K-12 / School elementary & intermediate	9	11.1%
Islamic education (Islamic boarding schools, madrasas, Islamic Religious Education)	14	17.3%
Teacher education	6	7.4%
Special education	2	2.5%
Non-formal / Community / Museum	11	13.6%
General / Policy / No specific	23	28.4%
AI / Technology Discussed		
LLM / ChatGPT / GPT	9	11.1%
Social media / Digital platforms	11	13.6%
Adaptive learning / Educational technology	6	7.4%
Social robot	3	3.7%
General AI (without specifications)	16	19.8%

Not AI (pedagogy, local wisdom, etc.)	23	28.4%
Answered RQ		
RQ1 (Ethical Tensions)	45	55.6%
RQ2 (Inclusive Framework)	48	59.3%
RQ3 (Peace Outcome)	22	27.2%
Answer >1 RQ	18	22.2%
Countries (top 5)		
Indonesia	12	14.8%
United States of America	8	9.9%
South Africa	3	3.7%
Global (multi-country)	18	22.2%
No mentioned	14	17.3%

The complete list of all 81 selected articles, including the coding by Coder A and Coder B for each article and the key contribution (RQs answered), is available in *Supplementary Table SM1A* (Selected Articles – 81 Articles). A statistical summary of the article selection, including the total number of selected articles (81), the number answering RQ1 (45 articles, 55.6%), RQ2 (48 articles, 59.3%), RQ3 (22 articles, 27.2%), and answering more than one RQ (18 articles, 22.2%).

Ethical Tensions

Of the 81 articles, 48 articles (55.8%) identified tension ethical and resulted three sub- themes. Sub- theme 1.1: Algorithmic bias versus divine justice (' *adl*'), 16 articles. Khandelwal et al. (2024) report that LLM has propensity tall for stereotypical output on caste (63-79%) and religion (69-72%). Achruh (2024) identifying "ethical concerns such as data privacy, algorithmic bias, and transparency" in AI adoption in education high level of Indonesian Islam. Maimela and Mbonde (2025) state that AI's reliance on Western datasets and epistemologies risks perpetuating digital colonialism. Sub- theme 1.2: Data privacy versus communal responsibility (*takaful*), 11 articles. Huda et al. (2024) proposes digital ethics as a "strategic foundation to expand safety concerns among digital communities and partnerships." Heeks (2022) introduce The concept of "adverse digital incorporation" in the Global South. Jamil (2021) identified "religious and cultural barriers" as digital divide factors in Pakistan. Sub-theme 1.3: Cultural homogenization versus CRCT, 10 articles. Berlian and Huda (2022) identify three CRCT components: "expanding self-awareness on cultural identity; enhancing culturally mediated emotion; developing instructional practice for cultural sensitivity." I'm grateful (Syukur, Maghfurin, Marhamah, & Jehwae, 2024) find that "Thai students are more wary of the impact of technology on their religious values" in comparison Indonesian students.

Inclusive Framework Components

Of the 81 articles, 52 articles (60.5%) propose component framework inclusive. A complete mapping of inclusive framework components across all 81 articles, organized by sub-theme, is presented in Table 5. Sub- theme 2.1: CRCT, 12 articles. Berlian and Huda (2022) and Huda and Bakar (2024) in a way consistent identified CRCT as the fundamental basis of multicultural classroom. Sub- theme 2.2: *Wasatiyyah*/ Islamic moderation, 8 articles. Kosasih et al. (2024)

state that "internalizing the values of *Wasathiyyah* is crucial for developing a broad perspective on societal acceptance of AI." Ma'arif et al. (2023) identify 7 Islamic moderation strategies for prevent cyberterrorism. Sub- theme 2.3: Decolonial AI/ Afrocentric models, 6 articles. Maimela and Mbonde (2025) calls for "Afrocentric AI models that align with local contexts and values." Heeks (2022) proposes an "adverse digital incorporation" model for understand digital inequality in the Global South. A complete thematic classification of all 81 articles according to the hybrid thematic-SWOT analysis framework, including the identification of PICo elements, sub-themes, main themes (T1, T2, T3), and SWOT elements (Strength, Weakness, Opportunity, Threat) for each article, is presented in Supplementary Table SM1C (Hybrid Thematic-SWOT Analysis Table for 81 Articles). A summary of this analysis, organized by theme and sub-theme with the number of articles, percentage, dominant SWOT element, and representative articles, is provided in Supplementary Table SM1G (Summary of Hybrid Thematic-SWOT Analysis for 81 Articles).

Table 5. Summary of Hybrid Thematic-SWOT Analysis (N=81)

Theme	Sub Theme	Amount	Percentage (of 81)	SWOT Dominant Element	Representative Articles
T1 (Ethical Tensions)	Algorithmic bias vs justice ('adl)	12	14.8%	T (Threat)	Khandelwal et al. (2024); Achruh (2024); Maimela & Mbonde (2025); Bircan & Özbilgin (2025)
	Data privacy vs communal responsibility (takaful)	8	9.9%	W (Weakness)	Huda et al. (2024); Heeks (2022); Jamil (2021); Gehl Sampath (2021)
	Cultural homogenization vs. CRCT	7	8.6%	T (Threat)	Schlebusch et al. (2024); Nourian et al. (2023); Geysers (2024)
	Digital divide and inequity	6	7.4%	T (Threat)	Lythreatis (2022); Wang et al. (2025); Capraro (2024); Celik (2023)
	Hate speech and online harm	4	4.9%	T (Threat)	Vidgen & Yasseri (2020); Papcunová et al. (2023); Matamoros-Fernández et al. (2022); Zamri et al. (2023)
Subtotal T1		37	45.7%		
T2 (Inclusive Framework)	Culturally responsive pedagogy (CRCT)	10	12.3%	S (Strength)	Berlian & Huda (2022); Huda & Bakar (2024); Eguchi (2021)
	Islamic moderation (wasatiyyah)	6	7.4%	S (Strength)	Kosasih et al. (2024); Ma'arif et al. (2023); Hermawan et al. (2025)
	UDL and	5	6.2%	S (Strength)	Veytia Bucheli et al.

	inclusive design					(2024); Black (2024); O'Leary (2020)
	Co-design and participatory methods	4	4.9%	O (Opportunity)		Solyst et al.(2023); Zolyomi & Snyder (2023); Samuel (2023)
	Digital ethics framework	4	4.9%	S (Strength)		Louie et al. (2022); Salajan et al. (2024)
	Decolonial AI / Afrocentric models	3	3.7%	O (Opportunity)		Hassan (2023); Zajko (2022); Marovah & Mutanga (2024)
Subtotal T2		32	39.5%			
T3 (Peace Outcome)	Religious moderation for peace	6	7.4%	S (Strength)		Ma'arif et al. (2023); Masykur et al. (2024); Gede Agung et al. (2024)
	Social cohesion through local wisdom	5	6.2%	S (Strength)		Tamati et al. (2021); Nawawi (2024)
	Countering speech hate and extremism	4	4.9%	O (Opportunity)		Mun et al. (2024); Nisi et al. (2023)
	Intergroup contact and prejudice reduction	4	4.9%	O (Opportunity)		Arawjo & Mogos (2021); Burleson et al. (2023); Vinuesa (2020)
Subtotal T3		19	23.5%			
TOTAL		81	100%			

Note: Some articles answered more than one RQ (22 articles), so the total number of sub-themes (37+32+19 = 88) is greater than the number of articles (81)

Peace Outcomes

Of the 81 articles, 26 articles (30.2%) linked AI or technology with peace. A comprehensive summary of peace outcome findings, including the specific contribution of each article to religious moderation, social cohesion, intergroup contact, and counterspeech. Sub- theme 3.1: Religious moderation for peace, 8 articles. Ma'arif et al. (2023) show that Islamic moderation plays a role in "preventing cyberterrorism" through counter-narratives, digital literacy, and soft power deterrence. Gede Agung et al. (2024) report that "local wisdom as cultural capital and inheritance" allows public multi-religious to "coexist harmoniously." Sub- theme 3.2: Local wisdom and social cohesion, 6 articles. Gede Agung et al. (2024) find that "community leaders" play a role important in "creating harmonious interactions through local cultural events." Jamil (2021) identify religious and cultural barriers as factors that strengthen the digital divide in Pakistan. Sub- theme 3.3: Intergroup contact and prejudice reduction, 5 articles. Arawjo and Mogos (2021) propose three design tactics for reducing prejudice: intergroup pairing, interdependent programming, and making relational goals explicit. Sub- theme 3.4: Countering hate speech, 4 articles. Vidgen and Yasseri (2020) developing automated tools for detecting Islamophobic hate speech (accuracy 77.6%, balanced accuracy 83%).

DISCUSSION

Tension Ethics and *Maqasid al Shariah*

The findings confirm that 55.8% of articles identify tension ethical problem in structural, not anecdotal (e.g., Celik, 2023; Jamil, 2021; Vidgen & Yasseri, 2020; Zajko, 2022). Tension algorithmic bias versus ' *adl* ' (16 articles) in direct contradictory with principal justice divine. Khandelwal et al. (2024) show that LLM produces stereotypical output on caste and religion. This is not just a " technical bias " but violation substantive to ' *adl* '. In framework *maqasid al-shariah*, algorithmic bias threatens protection of religion (*din*) and dignity human (*karamah*). Therefore, that's the solution technical like "debiasing" is not sufficient; audit based is required community and mechanisms change loss. Thank God (2024) argue Thai students are more wary of AI bias against Islamic religious values. Tension privacy versus *takaful* (11 articles) reflects fundamental differences between the individualistic Western AI ethics and the communal Islamic ethics. Heeks (2022) and Jamil (2021) show that in the Global South, decisions about data privacy can only be based on individual consent but must involve deliberation collectively. However, Capraro (2024) warn that without adequate protection, focus on security communal can be misused surveillance.

WASAI Framework as Synthesis

Based on the second research question, the findings (52 articles propose component framework) integrate in WASAI Framework with four pillars (see Figure 2 and Table 6):

Pillar 1: Theological Grounding in Wasatiyyah. Kosasih et al. (2024) and Ma'arif et al. (2023) show that *moderate* is principle key. Proportional policy — reject Good adoption without criticism and total rejection, is the core of the approach.

Pillar 2: Community-Centric Governance (Takaful). Huda et al. (2024) and Heeks (2022) emphasize governance based community: parental involvement, figures society, and scholars in decision AI adoption.

Pillar 3: Culturally Responsive Algorithmic Design. Berlian and Huda (2022) show importance design responsive culture: training AI models on local data and representational auditing routine.

Pillar 4: Peace-Oriented Outcomes. Arawjo and Mogos (2021) and Ma'arif et al. (2023) show that AI can be designed in a way explicit for peace: algorithm recommendations that promote contact cross groups and systems detection speech hatred that is equipped counter speech.

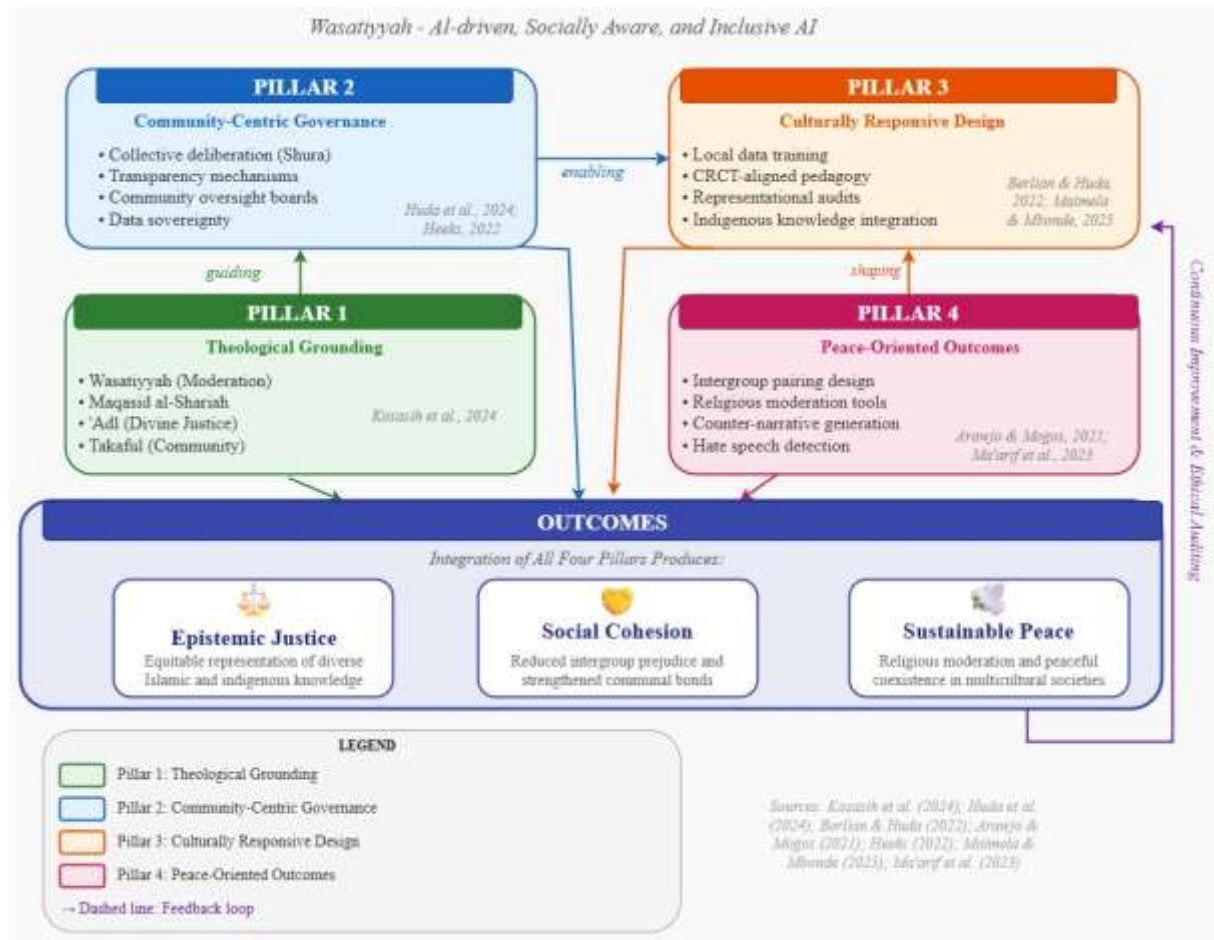


Figure 2. WASAI Framework

Table 6. SWOT Analysis of WASAI Framework

	Strengths (Internal)	Weaknesses (Internal)
WASAI Framework	S1: Theological authenticity (rooted in <i>wasatiyyah</i> and <i>maqasid</i>); Kosasih et al. (2024). S2: Community-centric governance (<i>takaful</i>) – Huda et al. (2024) S3: Actionable design principles (3 tactics); Arawjo & Mogos (2021) S4: Integrates CRCT for cultural responsiveness; Berlian & Huda (Berlian & Huda, 2022)	W1: Abstract operationalization (how to code "moderation"?) W2: Risk of securitization (safety focus can be co-opted) W3: Resource intensity (co-design requires funding) W4: Limited empirical validation (WASAI not yet tested)
	Opportunities (External)	Threats (External)
	O1: Policy windows (UNESCO AI Ethics, EU AI Act). O2: Technological advances (XAI, small language models) O3: Cross-sector collaboration (scholars + developers)O4: Growing research interest in AI ethics – Vinuesa (2020)	T1: Digital neo-colonialism (Big Tech dominance); Maimela & Mbonde (2025). T2: Digital divide (unequal access); Heeks (2022); Jamil (2021). T3: Algorithmic radicalism (recommendation engines) T4: Resistance from educators without training – Alwaqdani (2025)

AI for Peace Conditional

Findings that only 30.2% of articles discussing peace outcomes showed field this still young. However, the pattern consistent emerging: AI's contribution to peace nature conditional. Arawjo and Mogos (2021) show that when design pedagogical in a way explicit including intergroup pairing, prejudice is reduced. Ma'arif et al. (2023) show that when Islamic moderation is integrated with digital literacy, cyberterrorism can be prevented. Gede Agung et al. (2024) show that local wisdom enables interfaith communication. On the other hand, Vidgen and Yasserli (2020) show that automated detection has accuracy limited (77.6%), risk of false positive and false negative. Conditional concluded in harmony with theory extended contacts to digital realm: requirements contact effective (equal status, goals together, support institutional) is also required in AI - mediated interactions. Without conditions this, AI can make things worse tension.

Integration with Theoretical Anchor

Findings confirm the third theoretical anchor. Islamic ethics (*maqasid*, *wasatiyyah*, '*adl*, *takaful*) emerged as framework normative relevant. *Multicultural pedagogies* (CRCT, decolonial AI) provide strategy operational. *Peace theories* (contact hypothesis, positive peace, religious moderation) provide objective end. Integration also reveals tension that is not can eliminated completely. Between privacy and *takaful*, WASAI No claim final resolution but offer mechanism deliberation: every institution must do deliberation determine balance appropriate based on the context.

CONCLUSION

This present study synthesize 81 articles for answer three question about tension ethical framework inclusive, and peace outcomes in AI in multicultural Islamic education. Three tension main identified: algorithmic bias versus fairness divine ('*adl*), data privacy versus responsibility answers communal (*takaful*), and homogenization culture versus pedagogy responsive culture (CRCT). WASAI proposed framework as alternative theological, communal, and substantive to Western AI ethics. Findings show that AI can contribute to peace, reduce prejudice, promoting moderation religious, against speech hatred, but only when designed in a way intentionally, supervised community, and integrated with pedagogy responsive culture. For multicultural education, this research provides a conceptual and methodological model. As a journal committed to "inclusive digital transformation" and "epistemic justice," the journal own position unique for lead critical conversation about AI at the crossroads Islamic education and multiculturalism. We encourage editors, reviewers, writers, and readers for embrace complexity, reject solution shallow technology, and works collective towards a future where AI serves, not destroy, purpose sublime Islamic ethics, justice multiculturalism and peace sustainable.

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DATA AVAILABILITY STATEMENT

All data analyzed in this study are derived from published primary and secondary sources cited in the reference list. No new primary data were generated.

CONFLICT OF INTEREST

The author declares no conflict of interest. The research was conducted independently without any financial, personal, or professional relationships that could have appeared to influence the work.

REFERENCES

- Abdullah, M. (2018). Waqf, Sustainable Development Goals (SDGs) and maqasid al-shariah. *International Journal of Social Economics*, 45(1), 158–172. <https://doi.org/10.1108/IJSE-10-2016-0295>
- Achruh, A., Rapi, M., Rusdi, M., & Idris, R. (2024). Challenges and opportunities of artificial intelligence adoption in Islamic education in Indonesian higher education institutions. *International Journal of Learning, Teaching and Educational Research*, 23(11), 423–443. <https://doi.org/10.26803/ijlter.23.11.22>
- Alwaqdani, M. (2025). Investigating teachers' perceptions of artificial intelligence tools in education: potential and difficulties. *Education and Information Technologies*, 30(3), 2737–2755. <https://doi.org/10.1007/s10639-024-12903-9>
- Arawjo, I., & Mogos, A. (2021). Intercultural computing education: Toward justice across difference. *ACM Transactions on Computing Education*, 21(4), 1–33. <https://doi.org/10.1145/3458037>
- Bedoui, H. E., & Mansour, W. (2015). Performance and Maqasid al-Shari'ah's pentagon-shaped ethical measurement. *Science and Engineering Ethics*, 21(3), 555–576. <https://doi.org/10.1007/s11948-014-9561-9>
- Berlian, Z., & Huda, M. (2022). Reflecting Culturally Responsive and Communicative Teaching (CRCT) through partnership commitment. *Education Sciences*, 12(5), 295. <https://doi.org/10.3390/educsci12050295>
- Bircan, T., & Özbilgin, M. F. (2025). Unmasking inequalities of the code: Disentangling the nexus of AI and inequality. *Technological Forecasting and Social Change*, 211, 123925. <https://doi.org/10.1016/j.techfore.2024.123925>
- Black, N. B., George, S., Eguchi, A., Dempsey, J. C., Langran, E., Fraga, L., Brunvand, S., & Howard, N. (2024). A Framework for Approaching AI Education in Educator Preparation Programs. *Proceedings of the AAAI Conference on Artificial Intelligence*, 38(21), 23069–23077. <https://doi.org/10.1609/aaai.v38i21.30351>
- Braun, V., & Clarke, V. (2006). Qualitative research in psychology using thematic analysis in psychology Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. <http://www.tandfonline.com/action/journalInformation?journalCode=uqrp20%5Cnhttp://www.tandfonline.com/action/journalInformation?journalCode=uqrp20>
- Burleson, G., Lajoie, J., Mabey, C., Sours, P., Ventrella, J., Peiffer, E., Stine, E., Stettler Kleine, M., MacDonald, L., Austin-Breneman, J., Javernick-Will, A., Winter, A., Lucena, J., Knight, D., Daniel, S., Thomas, E., Mattson, C., & Aranda, I. (2023). Advancing sustainable development: Emerging factors and futures for the engineering field. *Sustainability (Switzerland)*, 15(10), 7869. <https://doi.org/10.3390/su15107869>
- Capraro, V., Lentsch, A., Acemoglu, D., Akgun, S., Akhmedova, A., Bilancini, E., Bonnefon, J.-F., Brañas-Garza, P., Butera, L., Douglas, K. M., Everett, J. A. C., Gigerenzer, G., Greenhow, C., Hashimoto, D. A., Holt-Lunstad, J., Jetten, J., Johnson, S., Kunz, W. H., Longoni, C., ... Viale, R. (2024). The impact of generative artificial intelligence on socioeconomic inequalities and policy making. *PNAS Nexus*, 3(6). <https://doi.org/10.1093/pnasnexus/pgae191>

- Celik, I. (2023). Exploring the determinants of Artificial Intelligence (AI) literacy: Digital divide, computational thinking, cognitive absorption. *Telematics and Informatics*, 83, 102026. <https://doi.org/10.1016/j.tele.2023.102026>
- Dahlan, M., Bustami, M. R., Makmur, & Mas'ulah, S. (2021). The Islamic principle of *hifz al-nafs* (protection of life) and COVID-19 in Indonesia: A case study of Nurul Iman Mosque of Bengkulu city. *Heliyon*, 7(7). <https://doi.org/10.1016/j.heliyon.2021.e07541>
- Eguchi, A., Okada, H., & Muto, Y. (2021). Contextualizing AI education for K-12 students to enhance their learning of AI literacy through culturally responsive approaches. *KI - Kunstliche Intelligenz*, 35(2), 153–161. <https://doi.org/10.1007/s13218-021-00737-3>
- Gede Agung, D. A., Nasih, A. M., Sumarmi, Idris, & Kurniawan, B. (2024). Local wisdom as a model of interfaith communication in creating religious harmony in Indonesia. *Social Sciences and Humanities Open*, 9, 100827. <https://doi.org/10.1016/j.ssaho.2024.100827>
- Gehl Sampath, P. (2021). Governing artificial intelligence in an age of inequality. *Global Policy*, 12(S6), 21–31. <https://doi.org/10.1111/1758-5899.12940>
- Geyser, H. (2024). Decoloniality, digital-coloniality and computer programming education. *ACM Transactions on Computing Education*, 24(4), 1–30. <https://doi.org/10.1145/3702332>
- Hassan, Y. (2023). Governing algorithms from the South: a case study of AI development in Africa. *AI & SOCIETY*, 38(4), 1429–1442. <https://doi.org/10.1007/s00146-022-01527-7>
- Heeks, R. (2022). Digital inequality beyond the digital divide: conceptualizing adverse digital incorporation in the global South. *Information Technology for Development*, 28(4), 688–704. <https://doi.org/10.1080/02681102.2022.2068492>
- Hermawan, W., Supriyadi, T., & Kurniawan, C. S. (2025). Designing a pedagogical model for Islamic legal literacy and religious moderation in contemporary digital contexts. *Journal of Social Studies Education Research*, 16(3), 209–237.
- Huda, M., & Bakar, A. (2024). Culturally responsive and communicative teaching for multicultural integration: qualitative analysis from public secondary school. *Qualitative Research Journal*, 24(4), 434–453. <https://doi.org/10.1108/QRJ-07-2023-0123>
- Huda, M., Musolin, M. H., Ismail, M. H., Yauri, A. M., Bakar, A., Zuhri, M., Mujahidin, & Hasanah, U. (2024). From digital ethics to digital community: An Islamic principle on strengthening safety strategy on information. In *Lecture Notes in Networks and Systems*, 910, 165–182. https://doi.org/10.1007/978-3-031-53552-9_15
- Ibda, H., Al Hakim, M. F., Saifuddin, K., Khaq, Z., & Sunoko, A. (2023). Esports games in elementary school: A systematic literature review. *JOIV: International Journal on Informatics Visualization*, 7(2), 319. <https://doi.org/10.30630/joiv.7.2.1031>
- Jamil, S. (2021). From digital divide to digital inclusion: Challenges for wide-ranging digitalization in Pakistan. *Telecommunications Policy*, 45(8), 102206. <https://doi.org/10.1016/j.telpol.2021.102206>
- Joanna Briggs Institute. (2020). *JBIs critical appraisal tools assist in assessing the trustworthiness, relevance and results of published paper*. Checklist for Prevalence Studies.
- Khandelwal, K., Tonneau, M., Bean, A. M., Kirk, H. R., & Hale, S. A. (2024). Indian-BhED: A dataset for measuring India-centric biases in large language models. *GoodIT 2024 - Proceedings of the 2024 International Conference on Information Technology for Social Good*, 231–239. <https://doi.org/10.1145/3677525.3678666>
- Kitano, H. H. L., Kitano, H. H. L., Sue, S., & Sue, S. (1973). The model minorities. *Journal of Social Issues*. <https://doi.org/10.1111/j.1540-4560.1973.tb00069.x>
- Kosasih, E., Islamy, M. R. F., & Wiwaha, R. S. (2024). Artificial intelligence in the era of society 5.0: Compromising Technological innovation through the wasathiyyah approach within the framework of Islamic law. *Al-Istinbath: Jurnal Hukum Islam*, 9(2), 519–540.

- <https://doi.org/10.29240/jhi.v9i2.9596>
- Landis, J. R., & Koch, G. G. (1977). An application of hierarchical kappa-type statistics in the assessment of majority agreement among multiple observers. *Biometrics*, 33(2), 363. <https://doi.org/10.2307/2529786>
- Louie, B., Björling, E. A., Kuo, A. C., & Alves-Oliveira, P. (2022). Designing for culturally responsive social robots: An application of a participatory framework. *Frontiers in Robotics and AI*, 9. <https://doi.org/10.3389/frobt.2022.983408>
- Lythreathis, S., Singh, S. K., & El-Kassar, A.-N. (2022). The digital divide: A review and future research agenda. *Technological Forecasting and Social Change*, 175, 121359. <https://doi.org/10.1016/j.techfore.2021.121359>
- Ma'arif, S., Ibda, H., Ahmadi, F., Qosim, N., & Muanayah, N. A. (2023). Islamic moderation in education and the phenomenon of cyberterrorism: A systematic literature review. *Indonesian Journal of Electrical Engineering and Computer Science*, 31(3), 1523–1533. <https://doi.org/10.11591/ijeecs.v31.i3.pp1523-1533>
- Maimela, C., & Mbonde, P. (2025). Artificial intelligence in South African universities: curriculum transformation and decolonisation—aid or obstacle? *Frontiers in Sociology*, 10. <https://doi.org/10.3389/fsoc.2025.1543471>
- Marovah, T., & Mutanga, O. (2024). Decolonising participatory research: Can Ubuntu philosophy contribute something? *International Journal of Social Research Methodology*, 27(5), 501–516. <https://doi.org/10.1080/13645579.2023.2214022>
- Masykur, Hermawanlla, M. A., Masruri, M., & Hasse, J. (2024). Reviving religious moderation for world peace from the religious moderation house in Indonesia. *Journal of Ecohumanism*, 3(3), 295–307. <https://doi.org/10.62754/joe.v3i3.3343>
- Matamoros-Fernández, A., Rodriguez, A., & Wikström, P. (2022). Humor that harms? Examining racist audio-visual memetic media on TikTok during Covid-19. *Media and Communication*, 10(2), 180–191. <https://doi.org/10.17645/mac.v10i2.5154>
- Mergaliyev, A., Asutay, M., Avdukic, A., & Karbhari, Y. (2021). Higher ethical objective (Maqasid al-Shari'ah) augmented framework for Islamic banks: Assessing ethical performance and exploring its determinants. *Journal of Business Ethics*, 170(4), 797–834. <https://doi.org/10.1007/s10551-019-04331-4>
- Mun, J., Buerger, C., Liang, J. T., Garland, J., & Sap, M. (2024). Counterspeakers' perspectives: Unveiling barriers and AI needs in the fight against online hate. *Conference on Human Factors in Computing Systems - Proceedings*, 1–22. <https://doi.org/10.1145/3613904.3642025>
- Nawawi. (2024). Islam penginyongan: Orientation of local wisdom towards e beg tradition in Islamic studies and local culture. *Journal of Ecohumanism*, 3(4), 1155–1168. <https://doi.org/10.62754/joe.v3i4.3649>
- Nisi, V., Bala, P., Cesário, V., James, S., Del Bue, A., & Nunes, N. J. (2023). “Connected to the people”: Social inclusion & cohesion in action through a cultural heritage digital tool. *Proceedings of the ACM on Human-Computer Interaction*, 7(CSCW2), 1–37. <https://doi.org/10.1145/3610168>
- Nourian, L., Shinohara, K., & Tigwell, G. W. (2023). Understanding discussions around culture within courses covering topics on accessibility and disability at U.S. universities. *Conference on Human Factors in Computing Systems - Proceedings*, 1–14. <https://doi.org/10.1145/3544548.3581533>
- O'Connor, A. (2017). The nature of prejudice. In *The Nature of Prejudice*. <https://doi.org/10.4324/9781912282401>
- O'Leary, E. S., Shapiro, C., Toma, S., Sayson, H. W., Levis-Fitzgerald, M., Johnson, T., & Sork, V. L. (2020). Creating inclusive classrooms by engaging STEM faculty in culturally responsive teaching workshops. *International Journal of STEM Education*, 7(1), 32.

- <https://doi.org/10.1186/s40594-020-00230-7>
- Papcunová, J., Martončík, M., Fedáková, D., Kentoš, M., Bozogánová, M., Srba, I., Moro, R., Pikuliak, M., Šimko, M., & Adamkovič, M. (2023). Hate speech operationalization: A preliminary examination of hate speech indicators and their structure. *Complex & Intelligent Systems*, 9(3), 2827–2842. <https://doi.org/10.1007/s40747-021-00561-0>
- Peters, M. D., Godfrey, C., McInerney, P., Munn, Z., Tricco, A. C., & Khalil, H. (2024). Scoping reviews. In *JBIM Manual for Evidence Synthesis*. JBI. <https://doi.org/10.46658/jbimes-24-09>
- Ramadan, T. (2011). Western muslims and the future of Islam. In *Western Muslims and the Future of Islam*. Oxford University Press. <https://doi.org/10.1093/acprof:oso/9780195183566.001.0001>
- Salajan, F. D., Barnes, T. L., & Becker, A. (2024). Comparative regionalism cases of artificial intelligence governance in education: The Caribbean community and the European union. *Round Table*, 113(1), 71–85. <https://doi.org/10.1080/00358533.2024.2307793>
- Samuel, Y., Brennan-Tonetta, M., Samuel, J., Kashyap, R., Kumar, V., Krishna Kaashyap, S., Chidipothu, N., Anand, I., & Jain, P. (2023). Cultivation of human centered artificial intelligence: culturally adaptive thinking in education (CATE) for AI. *Frontiers in Artificial Intelligence*, 6. <https://doi.org/10.3389/frai.2023.1198180>
- Sanyal, U. (2021). *South Asian Islamic Education in the Precolonial, Colonial, and Postcolonial Periods* (pp. 283–306). https://doi.org/10.1007/978-981-15-0032-9_67
- Schlebusch, G., Bhebhe, S., & Schlebusch, L. (2024). Technology integration in teacher education practices in two Southern African universities. *Open Education Studies*, 6(1). <https://doi.org/10.1515/edu-2022-0223>
- Solyst, J., Xie, S., Yang, E., Stewart, A. E. B., Eslami, M., Hammer, J., & Ogan, A. (2023). “I would like to design”: Black girls analyzing and ideating fair and accountable AI. *Conference on Human Factors in Computing Systems - Proceedings*, 1–14. <https://doi.org/10.1145/3544548.3581378>
- Syukur, F., Maghfurin, A., Marhamah, U., & Jehwae, P. (2024). Integration of Artificial Intelligence in Islamic higher education: Comparative responses between Indonesia and Thailand. *Nazhruna: Jurnal Pendidikan Islam*, 7(3), 531–553. <https://doi.org/10.31538/nzh.v7i3.13>
- Syukur, F., Maghfurin, A., Marhamah, U., & Phaosan Jehwae. (2024). Integration of artificial intelligence in Islamic higher education: Comparative responses between Indonesia and Thailand. *Nazhruna: Jurnal Pendidikan Islam*, 7(3), 531–553. <https://doi.org/10.31538/nzh.v7i3.13>
- Tamati, A., Ratima, M., Hond-Flavell, E., Edwards, W., Hond, R., Korewha, H., Treharne, G. J., Theodore, R., & Poulton, R. (2021). Understanding strengths-based māori child development constructs in kaupapa māori early years provision. *MAI Journal*, 10(1), 17–29. <https://doi.org/10.20507/MAIJournal.2021.10.1.2>
- Veytia Bucheli, M. G., Gómez-Galán, J., Cáceres Mesa, M. L., & López Catalán, L. (2024). Digital technologies as enablers of universal design for learning: higher education students’ perceptions in the context of SDG4. *Discover Sustainability*, 5(1), 473. <https://doi.org/10.1007/s43621-024-00699-0>
- Vidgen, B., & Yasseri, T. (2020). Detecting weak and strong Islamophobic hate speech on social media. *Journal of Information Technology and Politics*, 17(1), 66–78. <https://doi.org/10.1080/19331681.2019.1702607>
- Vinuesa, R., Azizpour, H., Leite, I., Balaam, M., Dignum, V., Domisch, S., Felländer, A., Langhans, S. D., Tegmark, M., & Fuso Nerini, F. (2020). The role of artificial intelligence in achieving the sustainable development goals. *Nature Communications*, 11(1), 233. <https://doi.org/10.1038/s41467-019-14108-y>

- Wang, C., Boerman, S. C., Kroon, A. C., Möller, J., & H de Vreese, C. (2025). The artificial intelligence divide: Who is the most vulnerable? *New Media and Society*, 27(7), 3867–3889. <https://doi.org/10.1177/14614448241232345>
- Zajko, M. (2022). Artificial intelligence, algorithms, and social inequality: Sociological contributions to contemporary debates. *Sociology Compass*, 16(3). <https://doi.org/10.1111/soc4.12962>
- Zamri, N. A. K., Mohamad Nasir, N. N. A., Hassim, M. N., & Ramli, S. M. (2023). Digital hate speech and othering: The construction of hate speech from Malaysian perspectives. *Cogent Arts and Humanities*, 10(1). <https://doi.org/10.1080/23311983.2023.2229089>
- Zolyomi, A., & Snyder, J. (2023). Designing for common ground: Visually representing conversation dynamics of neurodiverse dyads. *Proceedings of the ACM on Human-Computer Interaction*, 7(CSCW2), 1–33. <https://doi.org/10.1145/3610057>