From Amanah to Algorithms: Islamic Ethical and Epistemic Foundations for Value-Based AI Literacy in Primary Education

Surotun Nisa'
Universitas Islam Negeri K.H. Abdurrahman Wahid Pekalongan, Indonesia
E-mail: surotun.nisa50326003@mhs.uingusdur.ac.id

Abstract

The rapid expansion of artificial intelligence (AI) challenges Islamic thought and Islamic education to articulate ethical, epistemic, and social responses grounded in revelation and scholarly tradition. In Indonesia, where Coding and Artificial Intelligence has been introduced as an elective subject from grade 5 of primary school, the question is pressing, yet existing studies usually address ethics, religious authority, or pedagogy separately. This study describes and analyzes how ethics, epistemology, and social transformation are represented in scholarship and policy on AI from an Islamic perspective, and draws implications for Islamic education. Using a qualitative content analysis with hermeneutic interpretation, the data comprised scholarship on AI ethics and technology, works on Islamic ethics and epistemology, and policy documents, including the UNESCO Recommendation on the Ethics of Artificial Intelligence and Indonesian instruments. The ethical dimension is the most developed, whereas the epistemological and educational dimensions are treated unevenly and rarely connected to concepts such as *amanah*, *'adl*, *'ilm*, *tabayyun*, and *sanad*. The study concludes that these concepts support an integrated framework in which accountability remains with human agents, machine-generated knowledge is verified, and social benefit is pursued. The findings offer a theoretical basis for an Islamic paradigm of AI and for reflective, value-based AI literacy in Islamic education.

Keywords: artificial intelligence, Islamic ethics, Islamic epistemology, social transformation, Islamic education

Introduction

Artificial intelligence affects not only technology and the economy but also education, public information, and social morality. Scholars and institutions have produced a proliferating set of ethical guidelines; a review of 84 documents found convergence around transparency, justice and fairness, non-maleficence, responsibility, and privacy (Jobin et al., 2019). Other syntheses add beneficence, autonomy, and explicability (Floridi & Cowls, 2019). Critics caution that principles alone cannot guarantee ethical outcomes (Mittelstadt, 2019) and that algorithms raise persistent problems of opacity, bias, and responsibility (Mittelstadt et al., 2016). Education is a strategic arena, because AI tools are entering classrooms faster than the evidence on their pedagogical and ethical effects (Holmes & Tuomi, 2022; Zawacki-Richter et al., 2019). In Indonesia, Coding and Artificial Intelligence is an elective subject beginning in grade 5 of

primary school, with AI literacy and ethics among its content elements (CNA Indonesia, 2025; Kementerian Pendidikan Dasar dan Menengah, 2025). Islamic education, which aims to form faith, character, and responsibility, therefore faces the task of explaining what AI means for Muslim children and communities.

Mainstream AI ethics has been criticized for drawing on a narrow philosophical heritage; decolonial and data-justice scholars argue that AI can reproduce patterns of extraction and classification (Birhane, 2021; Couldry & Mejias, 2019). Large language models associate Muslims with violence at disproportionate rates (Abid et al., 2021), and search technologies reinforce stereotypes (Noble, 2018). There are also epistemic problems: language models generate fluent text without grounding in meaning (Bender et al., 2021), hallucinate unfaithful content (Ji et al., 2023), and operate as opaque systems (Burrell, 2016). For religious knowledge, where authenticity and authority are central, these features are especially consequential.

Islamic scholarship has begun to respond. Elmahjub (2023) argues that AI should be assessed against a pluralist benchmark reflecting the internal diversity of Islamic ethics, and Raquib et al. (2022) develop a virtue-based approach. The *maqasid al-shari'ah* framework offers a purposive method for judging technologies by the human goods they protect or endanger (Auda, 2008), and studies of digital Islam show that new media have redistributed religious authority (Bunt, 2018; Turner, 2007). Nevertheless, most of this work concentrates on a single dimension and rarely connects ethics to epistemology and educational practice. This indicates a *research gap* in the integrated analysis of how Islamic ethical and epistemic categories can inform the understanding and governance of AI, including in Islamic education in Indonesia.

This study therefore describes and analyzes the representation of ethical, epistemological, and social dimensions in scholarship and policy concerning AI from an Islamic perspective. Its objectives are (1) to identify the Islamic concepts through which these dimensions are articulated, (2) to evaluate how far these concepts are connected to current AI debates and policy, and (3) to formulate implications for Islamic education, particularly at the primary level. The main question is: how are ethics, epistemology, and social transformation related to AI articulated in Islamic thought and policy, and how can they be internalized in education? As a qualitative analysis, it advances no statistical hypotheses.

The study rests on an Islamic worldview in which knowledge and technology are embedded in a theocentric moral order. Humans are *khalifah* on earth (QS. Al-Baqarah [2]: 30) and bear the *amanah* that heavens and earth declined (QS. Al-Ahzab [33]: 72); they are forbidden from pursuing what they do not know (QS. Al-Isra' [17]: 36) and commanded to verify news before acting on it (QS. Al-Hujurat [49]: 6). Knowledge (*'ilm*) is bound to truthfulness, right conduct, and the proper ordering of the knower, expressed in *adab* (Al-Attas, 1993).

Methods

Research Design

This study used a qualitative approach with a content analysis design within an interpretive paradigm. Content analysis allows systematic yet contextual examination of meanings in texts (Hsieh & Shannon, 2005; Krippendorff, 2019). Here it focuses not on the frequency of terms but on the discourse structure through which ethical, epistemic, and social claims about AI are articulated. The analysis is complemented by hermeneutic interpretation, which reads these

claims in light of the Qur'an, the Hadith, and the Islamic intellectual tradition. The overall design is a form of library research that integrates and critically interprets existing knowledge to build a conceptual framework (Snyder, 2019).

Data Sources

The data are documents, not human participants, from three categories: (1) scholarship on AI ethics, algorithmic bias, generative AI, and AI in education; (2) scholarship on Islamic ethics, jurisprudence (*fiqh* and *usul al-fiqh*), and epistemology, including works on technology and religious authority; and (3) policy and normative documents, namely the UNESCO (2021) Recommendation on the Ethics of Artificial Intelligence, the Indonesian ministerial circular on AI ethics (Kementerian Komunikasi dan Informatika, 2023), the Indonesian Ulema Council fatwa on conduct in social media (Majelis Ulama Indonesia, 2017), and the regulation that positions Coding and Artificial Intelligence as an elective (Kementerian Pendidikan Dasar dan Menengah, 2025).

Procedures and Data Collection

Sources were identified through Scopus, Web of Science, and Google Scholar using keywords such as "artificial intelligence," "Islamic ethics," "maqasid," "religious authority," "algorithmic bias," and "AI in education," supplemented by citation chaining. Peer-reviewed publications from 2016 onward were prioritized, with foundational earlier works retained where conceptually indispensable. Each source was then analyzed for three units of meaning: ethical claims (what is right and responsible in designing and using AI), epistemic claims (knowledge, truthfulness, authority, and verification), and social and educational claims (effects on education, religious life, and justice).

Data Analysis

Analysis proceeded in three stages: (1) data reduction, identifying and categorizing text segments expressing ethical, epistemic, or social claims, with Islamic concepts such as *amanah* (trusteeship), *'adl* (justice), *mizan* (balance), *ihsan* (excellence), *'ilm* (knowledge), *tabayyun* (verification), and *sanad* (chain of transmission) as sensitizing categories while categories from the AI literature emerged inductively; (2) categorical-thematic analysis mapping normative Islamic concepts to AI issues; and (3) hermeneutic interpretation of these relationships in the context of Islamic educational practice and the national curriculum. Validity was supported by triangulation across the three source categories (Lincoln & Guba, 1985), an audit trail of coding decisions, and a deliberate search for disconfirming perspectives.

Results

The findings are descriptive and reflect the authors' analytic judgment on the corpus; they are not frequency counts. Two sets emerged: the distribution of the dimensions across source categories, and the Islamic concepts through which they are articulated.

Outcome 1: Distribution of the Dimensions across the Sources

Table 1 maps the three dimensions against the source categories. The ethical dimension is the most extensively developed in all of them: AI ethics scholarship and policy articulate principles and values, and Islamic scholarship articulates them through *maqasid*, *amanah*, and virtue. The epistemological dimension is treated mainly in technical and critical AI scholarship, where hallucination, opacity, and echo chambers are central, and in Islamic scholarship on authority and digital media. Direct engagement between Islamic epistemic categories and generative AI is limited, and in the policy documents analyzed transparency and explainability are

emphasized while religious epistemic categories such as *sanad* are not explicitly addressed, in the authors' reading. The social dimension is addressed across all categories, with attention to bias, extraction, religious authority, and education, and the policy documents stress inclusion and human oversight (Kementerian Komunikasi dan Informatika, 2023; UNESCO, 2021).

Table 1 Mapping of Ethical, Epistemological, and Social Dimensions across Categories of Sources

Dimension	AI ethics and technology scholarship	Islamic scholarship	Policy documents
Ethics	Convergence on principles; critique of principle-based ethics	*Maqasid*, *amanah*, virtue ethics, pluralist benchmarking	Values and principles in UNESCO and the Indonesian circular; MUI conduct guidance
Epistemology	Hallucination, opacity, echo chambers	*'Ilm*, *adab*, *sanad*, *fatwa* and *ijtihad*; limited engagement with generative AI	Transparency and explainability; religious epistemic categories not addressed
Social transformation	Bias, data colonialism, extraction, AI in education	Religious authority in digital media; *'adl*; education and *adab*	Inclusion and human oversight; Coding and AI elective from grade 5

Source: Authors' analysis.

Outcome 2: Islamic Concepts and Their Normative Bases

Table 2 summarizes the Islamic concepts that organize the dimensions, their normative bases, and the AI issues to which the literature relates them. Trusteeship (*amanah*, *khilafah*) and justice (*'adl*, *mizan*) are most often associated with accountability and fairness, while knowledge and verification (*'ilm*, *tabayyun*) and authorized transmission (*sanad*, consultation of *ahl al-dhikr*) are associated with the reliability of machine-generated content. Across the sources, however, these connections are usually implicit or developed in only one dimension.

Table 2 Islamic Concepts, Normative Bases, and AI-Related Issues

Concept	Normative basis	AI-related issue	Interpretive implication
Khilafah, *amanah*	QS. Al-Baqarah [2]: 30; QS. Al-Ahzab [33]: 72	Responsibility of designers, deployers, and users	Accountability stays with human agents
'Adl, *mizan*, *ihsan*	QS. Al-Ma'idah [5]: 8; QS. Ar-Rahman [55]: 7–9; QS. An-Nahl [16]: 90	Bias, discrimination, unequal benefits	Fairness assessment; care for the vulnerable
'Ilm, *tabayyun*	QS. Al-'Alaq [96]: 1–5; QS. Al-Isra' [17]: 36; QS. Al-Hujurat [49]: 6	Hallucination, misinformation, uncritical reliance	Verification and provenance before acceptance
Sanad, *ahl al-dhikr*	QS. An-Nahl [16]: 43	AI religious answers without accountable authority	Qualified human judgment
Maqasid, *maslahah*	Derived inductively from Islamic law (Auda, 2008)	Harms to religion, life, intellect, lineage, property	Evaluate technology by goods served

Source: Authors' analysis.

Discussion

Khalifah and Amanah as the Foundation of AI Ethics

The central ethical contribution of Islamic thought is to situate AI within a theory of trusteeship. *Khalifah* and *amanah* (QS. Al-Baqarah [2]: 30; QS. Al-Ahzab [33]: 72) frame humans as accountable trustees of their capacities, so designing and deploying powerful technology is a moral trust rather than a neutral engineering act. This addresses the gap between abstract

principles and practice that critics identify (Mittelstadt, 2019), because trusteeship ties principles to identifiable persons and institutions. The finding is consistent with Islamic virtue-based AI ethics (Raquib et al., 2022), with the *maqasid* as a purposive method (Auda, 2008), and with the view that machines are tools whose accountability traces back to humans (Bryson, 2018), even though artificial systems can act with consequence (Floridi & Sanders, 2004). It also matches the structure of Islamic law, in which obligation and liability attach to responsible persons (Hallaq, 2009), and it suggests that efforts to engineer "machine morality" (Wallach & Allen, 2009) cannot displace the responsibility of designers and institutions. Because Islamic ethics is internally diverse, the framework is a resource for deliberation rather than a single verdict (Elmahjub, 2023).

'Ilm, Tabayyun, and the Epistemic Challenge of Generative AI

The most distinctive contribution emerges in epistemology. The prohibition on pursuing what one does not know (QS. Al-Isra' [17]: 36) and the command to verify news (QS. Al-Hujurat [49]: 6) anticipate the problem of generative systems that produce confident but unverifiable output (Bender et al., 2021; Ji et al., 2023). The tradition of *sanad* ties religious claims to identifiable, evaluated sources, and *fatwa* and *ijtihad* entrust religious judgment to qualified, accountable persons (Hallaq, 2009), in line with the instruction to ask those who know (QS. An-Nahl [16]: 43). Contemporary demands for provenance and explainability (Burrell, 2016; Pasquale, 2015) thus find a counterpart in *sanad* and *tabayyun*. This reading does not claim that classical institutions can be transplanted unchanged; their underlying logic, which couples authority with accountability and traceability, can guide AI-assisted religious services. It also qualifies optimistic accounts of democratized religious knowledge, since religious-sounding content is not necessarily reliable (Bunt, 2018; Turner, 2007). Algorithmic personalization may further narrow exposure to the diversity of legitimate scholarly opinion (Nguyen, 2020). These concerns resonate with the Indonesian Ulema Council's emphasis on verification in digital conduct (Majelis Ulama Indonesia, 2017).

Social Transformation: Justice, Authority, and Governance

The evidence of bias, extraction, and unequal power in AI (Abid et al., 2021; Couldry & Mejias, 2019; Crawford, 2021; Noble, 2018; Obermeyer et al., 2019) shows that its transformations are not evenly beneficial. Decolonial critiques insist that affected communities take part in setting the terms of technology (Birhane, 2021; Mohamed et al., 2020). *'Adl* and *mizan* (QS. Al-Ma'idah [5]: 8; QS. Ar-Rahman [55]: 7–9) provide a vocabulary for such participation, since they treat injustice (*zulm*) as a matter for institutional remedy and not only individual piety. Hallaq (2013) argues that modernity detaches public institutions from ethical purposes; AI sharpens that predicament by embedding value-laden decisions in opaque infrastructure. International and national instruments respond with human rights, fairness, transparency, and human oversight (Kementerian Komunikasi dan Informatika, 2023; UNESCO, 2021), but they are not systematically connected to Islamic ethical categories. Responsible-AI scholarship stresses that ethics must be embedded in organizational practice rather than left to declarations (Coeckelbergh, 2020; Dignum, 2019), with mechanisms that translate principles into action (Taddeo & Floridi, 2018).

Implications for Islamic Education in Primary Schools

Coding and Artificial Intelligence enters the national curriculum from grade 5 with AI literacy and ethics among its elements (Kementerian Pendidikan Dasar dan Menengah, 2025), and the ministry stresses that the subject concerns values as well as techniques (CNA Indonesia, 2025).

For Islamic Religious Education, this creates an opportunity to connect AI literacy with values children can understand: honesty and verification (*tabayyun*) when using AI answers, responsibility (*amanah*) for what one creates and shares, fairness (*'adl*) toward others, and respect for the teacher as a source of guidance (*adab*) (Al-Attas, 1993). Concretely, lessons might ask pupils to compare an AI answer with a textbook or the teacher and discuss why the two may differ. Educational reviews warn that AI in education is often weak in theoretical grounding and attention to ethical risk (Holmes & Tuomi, 2022; Zawacki-Richter et al., 2019), and a parallel risk is that values are taught as normative routines rather than reflective awareness. The pedagogy should therefore be dialogical and experience-based, so that students understand why verification and responsibility are part of faith and not only school rules. This requires teachers prepared both technologically and ethically, and curricula that treat AI as an instrument serving human goods under human responsibility, not as a substitute for thinking or for qualified religious guidance.

Limitations and Future Research

First, the study is a conceptual analysis and does not test its propositions empirically; the framework requires validation through interviews, classroom observation, or analysis of Islamic Religious Education textbooks. Second, the selection of sources reflects the languages and databases searched and may under-represent Arabic, Malay, and Indonesian scholarship. Third, Islamic thought is diverse, and some schools or scholars may contest the interpretations here. Fourth, AI technologies and regulations evolve rapidly. Future research could examine how teachers and religious institutions use AI, evaluate language models' accuracy and bias on religious questions in several languages, and test classroom interventions combining AI literacy with Islamic ethical formation.

Conclusion

Islamic thought provides a strong conceptual foundation for understanding and governing AI. Ethically, *khalifah*, *amanah*, *'adl*, and the *maqasid al-shari'ah* keep accountability with human agents and orient technology toward public benefit. Epistemologically, *'ilm*, *tabayyun*, and *sanad* supply criteria for judging machine-generated knowledge and protecting the integrity of religious authority. Socially, AI is reshaping education, religious life, and justice in ways that call for inclusive and participatory governance. However, these concepts are still rarely connected to AI debates and policy, and in education there is a risk that they remain normative rather than reflective and transformative. This study contributes a theoretical basis for an Islamic paradigm of AI that integrates ethics, epistemology, and social transformation, and implications for reorienting Islamic education toward reflective, value-based AI literacy from the primary level. The research question is answered affirmatively: Islamic ethical and epistemic traditions can speak meaningfully to AI, but their contribution is most credible when pluralist, evidence-informed, and engaged with technical and educational realities. Future work should test the framework empirically.

References

Abid, A., Farooqi, M., & Zou, J. (2021). Persistent anti-Muslim bias in large language models. In *Proceedings of the 2021 AAAI/ACM Conference on AI, Ethics, and Society* (pp. 298--306). Association for Computing Machinery. https://doi.org/10.1145/3461702.3462624

Al-Attas, S. M. N. (1993). *Islam and secularism*. International Institute of Islamic Thought and Civilization.

Auda, J. (2008). *Maqasid al-shariah as philosophy of Islamic law: A systems approach*. International Institute of Islamic Thought.

Bender, E. M., Gebru, T., McMillan-Major, A., & Shmitchell, S. (2021). On the dangers of stochastic parrots: Can language models be too big? In *Proceedings of the 2021 ACM Conference on Fairness, Accountability, and Transparency* (pp. 610--623). Association for Computing Machinery. https://doi.org/10.1145/3442188.3445922

Birhane, A. (2021). Algorithmic injustice: A relational ethics approach. *Patterns, 2*(2), Article 100205. https://doi.org/10.1016/j.patter.2021.100205

Bryson, J. J. (2018). Patiency is not a virtue: The design of intelligent systems and systems of ethics. *Ethics and Information Technology, 20*(1), 15--26. https://doi.org/10.1007/s10676-018-9448-6

Bunt, G. R. (2018). *Hashtag Islam: How cyber-Islamic environments are transforming religious authority*. University of North Carolina Press.

Burrell, J. (2016). How the machine "thinks": Understanding opacity in machine learning algorithms. *Big Data & Society, 3*(1). https://doi.org/10.1177/2053951715622512

CNA Indonesia. (2025). *Kelas 5 SD hingga SMA dipastikan mulai belajar AI dan coding tahun ajaran baru*. https://www.cna.id/indonesia/kelas-5-sd-hingga-sma-dipastikan-mulai-belajar-ai-dan-coding-tahun-ajaran-baru-34721

Coeckelbergh, M. (2020). *AI ethics*. MIT Press. https://doi.org/10.7551/mitpress/12549.001.0001

Couldry, N., & Mejias, U. A. (2019). Data colonialism: Rethinking big data's relation to the contemporary subject. *Television & New Media, 20*(4), 336--349. https://doi.org/10.1177/1527476418796632

Crawford, K. (2021). *Atlas of AI: Power, politics, and the planetary costs of artificial intelligence*. Yale University Press. https://doi.org/10.12987/9780300252392

Dignum, V. (2019). *Responsible artificial intelligence: How to develop and use AI in a responsible way*. Springer. https://doi.org/10.1007/978-3-030-30371-6

Elmahjub, E. (2023). Artificial intelligence (AI) in Islamic ethics: Towards pluralist ethical benchmarking for AI. *Philosophy & Technology, 36*(4), Article 73. https://doi.org/10.1007/s13347-023-00668-x

Floridi, L., & Cowls, J. (2019). A unified framework of five principles for AI in society. *Harvard Data Science Review, 1*(1). https://doi.org/10.1162/99608f92.8cd550d1

Floridi, L., & Sanders, J. W. (2004). On the morality of artificial agents. *Minds and Machines, 14*(3), 349--379. https://doi.org/10.1023/B:MIND.0000035461.63578.9d

Hallaq, W. B. (2009). *Sharī'a: Theory, practice, transformations*. Cambridge University Press. https://doi.org/10.1017/CBO9780511815300

Hallaq, W. B. (2013). *The impossible state: Islam, politics, and modernity's moral predicament*. Columbia University Press. https://doi.org/10.7312/hall16346

Holmes, W., & Tuomi, I. (2022). State of the art and practice in AI in education. *European Journal of Education, 57*(4), 542--570. https://doi.org/10.1111/ejed.12533

Hsieh, H.-F., & Shannon, S. E. (2005). Three approaches to qualitative content analysis. *Qualitative Health Research, 15*(9), 1277--1288. https://doi.org/10.1177/1049732305276687

Ji, Z., Lee, N., Frieske, R., Yu, T., Su, D., Xu, Y., Ishii, E., Bang, Y. J., Madotto, A., & Fung, P. (2023). Survey of hallucination in natural language generation. *ACM Computing Surveys, 55*(12), 1--38. https://doi.org/10.1145/3571730

Jobin, A., Ienca, M., & Vayena, E. (2019). The global landscape of AI ethics guidelines. *Nature Machine Intelligence, 1*(9), 389--399. https://doi.org/10.1038/s42256-019-0088-2

Kementerian Komunikasi dan Informatika Republik Indonesia. (2023). *Surat Edaran Menteri Komunikasi dan Informatika Nomor 9 Tahun 2023 tentang Etika Kecerdasan Artifisial*. Kementerian Komunikasi dan Informatika.

Kementerian Pendidikan Dasar dan Menengah Republik Indonesia. (2025). *Peraturan Menteri Pendidikan Dasar dan Menengah Nomor 13 Tahun 2025*. Kementerian Pendidikan Dasar dan Menengah.

Krippendorff, K. (2019). *Content analysis: An introduction to its methodology* (4th ed.). SAGE Publications. https://doi.org/10.4135/9781071878781

Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. SAGE Publications.

Majelis Ulama Indonesia. (2017). *Fatwa Majelis Ulama Indonesia Nomor 24 Tahun 2017 tentang hukum dan pedoman bermuamalah melalui media sosial*. Majelis Ulama Indonesia.

Mittelstadt, B. D. (2019). Principles alone cannot guarantee ethical AI. *Nature Machine Intelligence, 1*(11), 501--507. https://doi.org/10.1038/s42256-019-0114-4

Mittelstadt, B. D., Allo, P., Taddeo, M., Wachter, S., & Floridi, L. (2016). The ethics of algorithms: Mapping the debate. *Big Data & Society, 3*(2). https://doi.org/10.1177/2053951716679679

Mohamed, S., Png, M.-T., & Isaac, W. (2020). Decolonial AI: Decolonial theory as sociotechnical foresight in artificial intelligence. *Philosophy & Technology, 33*(4), 659--684. https://doi.org/10.1007/s13347-020-00405-8

Nguyen, C. T. (2020). Echo chambers and epistemic bubbles. *Episteme, 17*(2), 141--161. https://doi.org/10.1017/epi.2018.32

Noble, S. U. (2018). *Algorithms of oppression: How search engines reinforce racism*. New York University Press. https://doi.org/10.18574/nyupress/9781479833641.001.0001

Obermeyer, Z., Powers, B., Vogeli, C., & Mullainathan, S. (2019). Dissecting racial bias in an algorithm used to manage the health of populations. *Science, 366*(6464), 447--453. https://doi.org/10.1126/science.aax2342

Pasquale, F. (2015). *The black box society: The secret algorithms that control money and information*. Harvard University Press. https://doi.org/10.4159/harvard.9780674736061

Raquib, A., Channa, B., Zubair, T., & Qadir, J. (2022). Islamic virtue-based ethics for artificial intelligence. *Discover Artificial Intelligence, 2*, Article 11. https://doi.org/10.1007/s44163-022-00028-2

Snyder, H. (2019). Literature review as a research methodology: An overview and guidelines. *Journal of Business Research, 104*, 333--339. https://doi.org/10.1016/j.jbusres.2019.07.039

Taddeo, M., & Floridi, L. (2018). How AI can be a force for good. *Science, 361*(6404), 751--752. https://doi.org/10.1126/science.aat5991

Turner, B. S. (2007). Religious authority and the new media. *Theory, Culture & Society, 24*(2), 117--134. https://doi.org/10.1177/0263276407075001

UNESCO. (2021). *Recommendation on the ethics of artificial intelligence*. https://unesdoc.unesco.org/ark:/48223/pf0000381137

Wallach, W., & Allen, C. (2009). *Moral machines: Teaching robots right from wrong*. Oxford University Press. https://doi.org/10.1093/acprof:oso/9780195374049.001.0001

Zawacki-Richter, O., Marín, V. I., Bond, M., & Gouverneur, F. (2019). Systematic review of research on artificial intelligence applications in higher education: Where are the educators? *International Journal of Educational Technology in Higher Education, 16*, Article 39. https://doi.org/10.1186/s41239-019-0171-0