Human-centered Approach to the Governance of AI in Higher Education

Principles of International Practice

Ratna Selvaratnam, Edith Cowan Univ. Australia
Lynnae Venaruzzo, Western Sidney Univ. Australia

Keywords

Artificial intelligence, higher education, human-centered approach, consciousness, governance, ethical principles, wellbeing.

Abstract

A recent study in Australasia (Selvaratnam & Venaruzzo, 2023) revealed some challenges and gaps in the governance of AI and data in higher education, mainly from the human-centeredness perspectives of accessibility, inclusivity and wellbeing. This paper is a narrative review to discern principles of a human-centered approach to the governance of artificial intelligence (AI), benchmarking literature, policies and practice across diverse geopolitical contexts for higher education, synthesizing the review results to provide guiding principles that can support this.

Corresponding Authors: Dr. Ratna Selvaratnam, Edith Cowan University, Lynnae Venaruzzo, Western Sidney University, Email: r.selvaratnam@ecu.edu.au
To quote this article: Selvaratnam, R., Venaruzzo, L. 2024. "Human-centered Approach to the Governance of AI in Higher Education: Principles of International Practice". *Journal of Ethics in Higher Education* 5(2024): 79–102. DOI: 10.26034/fr.jehe.2024.6864

> “Education either functions as an instrument which is used to facilitate integration of the younger generation into the logic of the present system and bring about conformity or it becomes the practice of freedom, the means by which men and women deal critically and creatively with reality and discover how to participate in the transformation of their world. – Paulo Freire, “Pedagogy of the Oppressed”

1. Introduction

Generative artificial intelligence (AI) is increasingly becoming ubiquitous in our daily lives, be it professional or personal. The systems are also as good as the data that feed them. However, AI and its access are developing at an unequal rate across the world, and the speed of which is causing both excitement at its potential and concern with its prevalence. The literature is still emerging. The rate of evolution of the systems in many instances is too fast for the study of its impact across multiple facets of human lives and the ecology of our existence. Hence, governance becomes more important than ever.

A recent study in Australasia (Selvaratnam & Venaruzzo, 2023) revealed some challenges and gaps in the governance of AI and data in higher education, mainly from the human-centeredness perspectives of accessibility, inclusivity and wellbeing. They report that a significant proportion of higher education institutions are using artificial intelligence (AI) in the absence of robust governance frameworks to ensure responsible and ethical use of AI in teaching, learning and research. Since then, Australia’s Department of Education (2024) has released the Australian Framework for Generative Artificial Intelligence, clearly calling out these tools to be used in alignment with human and social wellbeing, diversity of perspectives and human rights.

There are other efforts globally to define and understand the impact of these systems on humanity. One such initiative is that by Stanford University. The mission of its Human-Centered AI institute (2024) is to advance AI research, education, policy and practice to improve the human condition. Their detailed AI Index Report highlights global governments’ increasing concern as AI

faces what they call two interrelated futures. In the first, technology continues to improve and is increasingly used, having major consequences for productivity and employment, and this is usually positive. In the second scenario, the adoption of AI is constrained by the limitations of the technology itself and how usable it is broadly. The concern of governments here can be seen on the policy front. Global mentions of AI in legislative proceedings are reflected in the report as the highest of all time. It calls out that robust and standardised evaluations for the responsible governance of Large Language Models (LLM) are seriously lacking while investment in generative AI continues to grow.

While there is this background of global concern, discussions on what ethics should be given to future super-intelligent machines is unclear and without consensus, especially when we do not know what the best ethics are today or for the future (Søvik, 2022) across a multiplicity of environments. Additionally, there is argument that scholars ought to design for systems and not just for users (Campos et al, 2023). This includes the complex body of organizational routines, cultural practices and interactions among multiple stakeholders where distributed leadership occur if designed correctly. Further hampering the situation is that there is no robust precedent to build on as there are only a few confusing definitions and little overt reference to AI as a research object in the literature (Bearman et al., 2022).

2. Methodology

Due to the lack of a robust precedent, a narrative review approach is selected to piece together the evidence in this emerging space (Pae et al., 2015; Redman et al., 2015; Baethge et al., 2019). This paper critically examines the literature on ethical AI and data governance from a human centric approach, to be able to develop universal principles for AI governance which give rise to wellbeing in global higher education. This paper seeks to identify, and select based on eligibility, the inclusion of criteria for the proposed principles from a dearth of research in this space. Hence the approach has been to use relevant search terms on the governance of data and AI internationally and also the purpose of higher education that can be augmented by ethical AI, in

academic publication databases, public searches and policy aggregation sites. The literature in this paper includes peer review articles, thought leadership pieces and policies in the areas of artificial intelligence, data governance and human wellbeing in education. This approach is chosen not only to identify knowledge gaps but to scope a body of literature to clarify concepts.

3. Literature Review

Pockets of work are emerging to synthesise general principles in frameworks for ethical AI including benchmarking literature, policies and practice across diverse geopolitical contexts for higher education (Pente et al., 2021; Jobin et al., 2019). However, this is a moving feast in trying to keep pace with rapid developments in technology. Hagendorff (2020) opines that in general, ethical guidelines postulate very broad, overarching principles which are then supposed to be implemented in a widely diversified set of scientific, technical and economic practices, and in sometimes geographically dispersed groups of researchers and developers with different priorities, tasks and fragmental responsibilities. Ethics thus operates at a maximum distance from the practices it actually seeks to govern.

Work such as Jobin et al.'s (2019) considers a global synthesis emerging around the five ethical principles of transparency, justice and fairness, non-maleficence, responsibility and privacy. It is however subjective in application, differing across contexts in how these principles are interpreted, why they are deemed important, what their relevance is to context and stakeholders, and which implementation approach is to be used. Floridi & Cowls (2019) also identify an overarching framework consisting of similar core principles but also include beneficence and autonomy. These draw from the approach in bioethics. They argue that a new principle is needed to demystify the engagement of AI. This would be explicability, which incorporates both the epistemological sense of intelligibility to understand how something works, and in the ethical sense of accountability to understand who is responsible for the way something works.

This perspective is important when one considers what has been influencing the ethics of AI. This causes deliberations on what roles are needed in

organisations now to surmount this need such as the rise of Chief Privacy and Chief Ethics Officers (Timofte, 2022). Large organisations are beginning to take the governance of data seriously and are rapidly maturing in this space. There is intentional development in approaches towards increased collaboration between a wide range of stakeholders within an institution and across a complex data ecology (Prinsloo et al, 2023) to remove silos with domains traditionally associated with Chief Data Officers and the like. One example is the Model Spec from OpenAI (2024) which defines the objectives of their AI assistant or agent are to assist the developer and end user, to benefit humanity, and to reflect well on OpenAI, including how they use data. Data governance is the foundation of trustworthy AI (Janssen et al., 2020). Tasioulas (2022) argues that an optimising mindset prevalent among main stakeholders such as computer scientists and economists, has led to an approach focused on maximizing the fulfilment of human preferences, potentially compromising right governance of data. Human preferences are not necessarily what is best for human needs.

Global Policy Perspectives

At a governmental scale, OECD (2023)'s recommendation for the Council on Artificial Intelligence underscores inclusive growth, sustainable development and wellbeing as macro principles which can guide the governance and ethics of AI. Human centricity is an important focus with recommendations to focus on human-centered values and fairness. Updated OECD advice (2024) consider the uses of AI systems and implications for human rights, including risks that human-centred values might be deliberately or accidently infringed. Values-alignment in AI systems then become more important and there will be the need to revisit the values implicit in their design and also to include appropriate safeguards. This could be designing in the capacity for human intervention and oversight, as appropriate to the context and can address the safeguard issue. Further, OECD (2024b) is now postulating the need to account for the emergence of general-purpose and generative AI. Their earlier AI guidelines have now been sharpened in the approach to privacy, intellectual property rights, safety and information integrity. It is the first intergovernmental standard on AI with forty-seven

adherents. They have identified more than a hundred policy related AI initiatives in over seventy countries and jurisdictions. Key elements of the OECD revisions, which ensure that the principles remain relevant, include underscoring the need for jurisdictions to work together to promote interoperable governance and policy environments for AI, as the number of AI policy initiatives worldwide grows exponentially, reflecting governments' concerns.

While not exhaustive, there are several noteworthy efforts of national governments attempting to address the governance of AI, both acting alone and in regional collaboration. The European Union's (2024) landmark AI Act is a proposed European regulation on AI and is the first comprehensive regulation on AI by a major regulator anywhere. It was eagerly anticipated globally to set the benchmark for early, comprehensive regulation. Another example is the National Institute of Standards and Technology's (2024) draft Plan for Global Engagement on AI Standards (NIST AI 100-5) which calls for a coordinated effort to work with key international allies and partners to guide organisations to drive development and implementation of AI-related standards, including cooperation, coordination and information sharing. It is noted that these are predominantly Western sources, and even within that there can be differences in ethical approaches, as can be seen in the United States which is arguably more utilitarian compared to the European Union's rather "strict deontological approach" (Parsons, 2021).

Inclusive Perspectives

Casting the net wider, there are strong rights-based approaches to principles for AI from a wider global context. For example, Fjeld et al. (2020) analyse sources from Latin America, East and South Asia, the Middle East, North America, and Europe. They observe cultural differences doubtless impact their contents. They consider too that they are authored by different stakeholders including governments and intergovernmental organisations, companies, professional associations, advocacy groups and multi-stakeholder initiatives. The principles they identify include principles on the human control of technology and promotion of human values. The Global South is an important region in this discourse, though some countries do still have

strong Western influences such as Australia, which has developed its AI Ethics principles by the Department of Industry, Science and Resources (2023).

Ethical consequences of AI further hamper decolonisation (van Norren, 2023) through epistemic injustices (Eke et al, 2023) favouring Western knowledge systems including capitalist socioeconomic paradigms. An alternative lens the authors posit are the ethics of Ubuntu in Africa which can be used for the development of relational AI rather than the focus on individual gain, while embodying true inclusiveness. Brokensha et al (2023) argue discussion of artificial intelligence in and for Africa cannot be divorced from power asymmetries and inequities that have their roots in the practice of colonialism and that these are still ongoing. In the Asian region, ASEAN (2024) goes further to emphasise human-centricity, where AI systems should respect human-centred values and pursue benefits for human society, including human beings' wellbeing, even calling out nutrition. The solution to alignment issues in AI can potentially be solved by aligning them with human values through a democratic approach (Greenfield, 2024). There are opportunities to pull together these diverse voices. Globethics (2024) acknowledges global multistakeholder collaboration on ethical guidelines are necessary but needs to be dynamic to accommodate emerging questions, innovative ideas and concerns in an inclusive way. Higher education is one of the backdrops against which this can happen.

Higher Education

The World Economic Forum (2024) emphasises the significance of the human in teaching and learning within the context of increasing accessibility to generative AI. They are not alone in arguing that by freeing educators from routine tasks, AI empowers them to focus on building relationships, understanding individual student needs and fostering motivation. This synergy not only improves teaching effectiveness but also underscores the indispensable human element in education. Tawil & Miao (2024) provide a comprehensive overview of UNESCO's human-centered approach to steering digital education that counter-balances "dominant techno-solutionist thinking", which includes AI. This ensures that the use of digital technology

enhances human capacity, rather than undermining it. The approach is proposed to also adequately address digital divides and digital gender inequality, and should furthermore adequately assure effective regulation to minimise the negative impact both on human wellbeing and on the environment.

To this end, AI governance and ethics in higher education is not far removed from the larger discourse when examining the body of literature on ethical principles, for example in the established discipline of Artificial Intelligence in Education (AIED) (Nguyen et al, 2022). There is also AI supported work in education as to what wellbeing might look like, such as Tang et al's (2023) Wellbeing Model. It can collect wellbeing data at low cognitive cost, while also tracking wellbeing in real time at multiple levels such as individual, class and school levels. The model can give immediate feedback allowing for iterative improvements within short continuous cycles, evidencing how AI can be used for wellbeing in education, in addition to teaching and learning activities.

Higher order thinking in education is elucidated in UNESCO's (2024) draft AI competency framework for teachers and students, which has creativity as the end goal. The shift to higher order thinking enabled by AI is also reflected in JISC's AI in Education Maturity Model (Webb, 2024). It describes that at its most mature, the right tasks are automated, freeing time for creativity and human interaction. This supports employability outcomes, even almost esoteric ones, where jobs of the future may well be about the heart (Raman & Flynn, 2024) as routine tasks and early level resolution can be increasingly automated as the technology continues to mature.

Higher education has an important part to play in how humans perceive reality and interact with our environments, especially when there is freed up time to design and participate in higher order thinking. Neurotechnology is an area of great potential but requires strong oversight, potentially redefining how education happens and what its purpose is. UNESCO (2024b) recognises neurotechnology's potential ethical issues and problems particularly with its use of non-invasive interventions. Combined with AI, its resulting potential can easily become a "threat to notions of human identity, human dignity,

freedom of thought, autonomy, (mental) privacy and wellbeing". UNESCO continues to convene and deliberate options going forward with an expert group to formulate recommendations for this emerging field.

Consciousness in Higher Education

The study of consciousness in higher education has been around for a while now. It may be a way forward as a counterpoint to this current context of AI as seen in the preceding literature. Terrace & Metcalfe (2005) argue that educators can alter students' consciousness by introducing alternate perspectives and exposing and critiquing embedded assumptions. This human-centric perspective is a form of higher order thinking which will become a skill of increasing value. Through metacognitive processes, students can become more fully conscious. One way to do this is by introducing them to cognitive distortions that challenge their conceptions of reality and encouraging them to reflect on what they are learning. It is worth revisiting Paulo Freire's (1970) purpose of "problem-posing" education in The Pedagogy of the Oppressed. He argues people can develop their power to perceive critically the way they exist in the world "with which and in which" they find themselves. Importantly, they will begin to see the world not as a static reality, but as a reality in process, where they can discern transformation occurring:

> "It is to the reality which mediates men, and to the perception of that reality held by educators and people, that we must go to find the program content of education. The investigation of what I have termed the people's "thematic universe" – the complex of their "generative themes" – inaugurates the dialogue of education as the practice of freedom.

Ethics can then be conceived as relational with particular realities.

Some schools of thought consider that deeper learning areas are congruent with different levels of consciousness, expanding and transforming the learning experience. To teach and learn effectively requires participants in the experience to profoundly uncover connections, interdependencies, and

truthful relations of what is being studied. Di (2020) argues a key focus of consciousness in education and life is not only ethical but also spiritual. This understanding provides a very different orientation, criteria, and application for human ethics. The focus then moves towards more inclusive and collective gains, while developing a connected consciousness. Jack (2020) further clarifies that by providing an environment that acknowledges the inner self, which one may refer to as spiritual, students can start developing insight into the higher purpose of their lives. They can intentionally activate deeper levels of consciousness by collaborating to create learning experiences together with educators. This collaboration gives rise to an adaptable life curriculum with the flexibility to accommodate student needs, within the context of larger cultures and external realities, akin to Freire's approach to authentic content in education.

When we consider human centricity in higher education as a possibility enabled by the freeing of time through ethical AI, we can also begin to consider how this facilitates wellbeing. Sharp (2012) defines the primary goal of humanistic education as human wellbeing, drawing from the principles of humanism which are mostly attributed to the work of Abraham Maslow (1908–1970) and Carl Rogers (1902–1987). There is recognition in research that scholar-practitioners and students are looking for meaning, a theme that may be contrasted with Freire's concept of transactional or banking education. With the right causes and conditions, both parties' interest in spiritual issues can be encouraged, when they are supported with the environment to explore these within their academic pursuits (Gunnlaugson et al., 2014) and in a context of a philosophy of integrative education (Palmer & Zajonc, 2010). The next step from this, the crux of human being-ness, can be argued as the highest rung of Maslow's hierarchy of needs, which is self-actualisation.

In the pinnacle of education, one can argue that self-actualisation is wisdom. There is a strong body of literature to support this perspective. As it is not always in the forefront, Diamond (2021) argues for working to re-establish the development of wisdom as a credible field of scholarship within the modern university, including across and through various ways of knowing. There can be resistance to this because the work is being conducted in a

university environment that has focused on pursuing ways of knowing that has been strongly influenced by, and a result of, industrialisation, colonisation and dogma of the time. The approach here is to articulate problems which are then to be solved by employing science. However, despite this, Rampal et al. (2022) provide insight as to how wisdom is, or might be, perceived and enacted in higher education contexts. The educator will need key pedagogical skills in order to know how to develop balance for themselves and their teaching environment, to create the causes and conditions for wisdom to emerge in their students (Rhea, 2018). Further, Bruya & Ardelt (2018) in their study prove that wisdom can indeed be taught in the classroom, where they published research on how a wisdom curriculum has shown measurable increase in wisdom within a traditional higher education setting.

Human-centered AI (HAI)

This then brings us to human-centred AI in higher education. Tawil & Hoven (2024) discuss the significance of what they term "re-humanising education" and educational research within an AI-dominated era. This is to encourage deep and critical thinking within a constantly changing dynamic, which then allows for revisiting ready assumptions, allowing for authentic meaning to occur and to be assimilated. Emerging proponents of Human-Centered AI (HAI) such as Yang et al. (2021) support approaches ranging from highly centralized models to more distributed and participatory frameworks. Further, Gattupalli & Sai (2024) suggest that human-centered AI may actually propel an educational renaissance that uplifts not only the learning endeavour but also the human spirit. They caution, however, that this must be built on moral foundations which serve all students. This can be achieved with the elevation of human emotional intelligence alongside AI.

One might argue that the time of emotional intelligence is now. When basic needs are met, abundance and solidarity lead people from the most developed regions to want to climb Maslow's Hierarchy of Needs (Julien, 2023). This manifests in them seeking an environment that supports their emotional needs, expresses their individuality, and assists their search for meaning. The quest devolves capitalistic tendencies of consumption but evolves more consideration of the collective. In Bozkurt's (2023) systematic review of

generative AI in education, they found emotional intelligence emerges as a fundamental attribute, as AI systems' ability to discern and respond to nuanced emotional cues is still not mature. This in turn plays a substantial role in the desired outcome of educational interactions. Bearman et al's (2024) study shows the relationship between evaluative judgement and generative AI is more than just the application of human judgement to machine outputs. They suggest people have a collective responsibility, as educators and learners, to ensure that humans do not relinquish their roles as arbiters of quality (Bearman et al, 2024) and the overall learning experience.

There are concrete examples of how the pursuit of higher order thinking can be achieved in higher education impacted by AI. For example, one of the findings of the Monash Centre for Consciousness and Contemplative Science along with other university partners is that AI chatbots can effect behaviour change, with potential for applications in groups that are diverse and where representation is suboptimal (van Baal et al, 2024). Additionally, Rebecchi & Hagege (2022) discuss the value of harnessing attentional states of consciousness for educational purposes. They suggest we should seek to develop digital educational programs capable of fostering flow, mind wandering and mindfulness. Harnessing attention as a cognitive tool can be designed to foster all attentional states of consciousness and responsible creativity. It is then of emerging importance to ask critical questions about AI design and implementation and what the implications may be for humans in educational systems and the unique challenges it poses (Southgate, 2020).

4. Discussion

In the not so recent past, a discussion on evolving human consciousness through higher education in the context of ethical governance of AI could have seemed disparate. Since the end of 2022, with mass public access to generative AI, this does not seem to be the case anymore. The discussion of intelligence need not be divorced from that of consciousness, as AI has fundamentally changed the way we view the world and interact with it. Human centricity is not the surface level interaction with our world but the deep sense-making that we can develop through the right causes and

conditions within a robust education which affords wisdom. The preceding literature shows a range of measures being taken to govern AI both at a macro geopolitical level and also translating governance to institutional levels including in higher education. Governance in the higher education setting needs to be contextualised within the core purpose of education. In considering the human-centered approach to the governance of AI, it is also relevant to consider human-centered approaches in education and its role in supporting wellbeing and maturing human consciousness.

A model for a human-centered approach to the governance of AI in higher education:

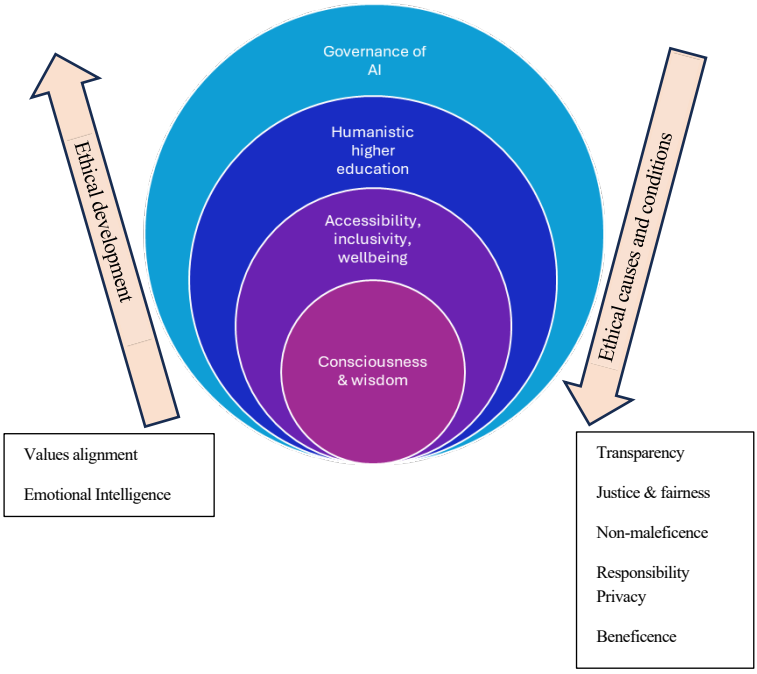

Figure 1 The relationship between human consciousness and governance of AI in higher education

Figure 1 is a proposed framework which shows the relationship between human consciousness and the governance of artificial intelligence within

the higher education context. There are challenges and gaps in the governance of AI and data in higher education, mainly from the human-centeredness perspectives of accessibility, inclusivity and wellbeing. To discern principles of a human-centered approach to the governance of artificial intelligence, there needs to be an accounting of diverse global perspectives to make it truly relevant. Ethics of AI guides the right application of the technology in various facets of human life through interdisciplinary collaboration. There are two principles which emerge from this model:

— Principle 1: Designing governance of AI from wisdom consciousness is dynamic, promoting wellbeing and humanistic higher education that is supported through ethical development based on values alignment and emotional intelligence.

— Principle 2: Governance of AI in higher education supports wellbeing and the evolution of human consciousness through ethical causes and conditions which consist of transparency, justice & fairness, non-maleficence, responsibility, privacy, beneficence, autonomy, explicability, inclusivity and relationality.

The flourishing of wisdom as the pinnacle of education provides the opportunity for meaningful transformation of the reality we live in, which will increasingly be mediated with AI. Supporting the evolution of human consciousness promotes wellbeing as both a result of, and a condition for, this flourishing by ensuring equal access and inclusion for all in education. Higher education then has an important role to play to evolve the human condition through continuous learning and adaptation, and iterative feedback loops, to meet the societal and economic demands of the time through critical study and creative application of that learning. The right design of the overarching governance of AI ensures geopolitical considerations of prevailing values which account for universal societal wellbeing within the education space.

There are significant implications for practice that result from this framework. In a time when the desire for, and the fear of, the increasing reach of artificial intelligence in all facets of our life is showing no signs of abating, a bold approach is needed to both make sense and guide the rapid proliferation of this technology. Education can play an important role to serve this function

including developing the emotional intelligence of learners. More work needs to be done at the government level to ensure higher education supports learners to participate in the AI economy. Learners are guided to shape the direction and adoption of AI meaningfully through responsible use. An employable graduate is also one who can bring this learning and ethos to the industries they partake in. The development of a holistic individual, not shy to call out the wisdom learning in the process, is a condition we can create in the institutions of higher learning that already exist, and maybe even to develop new types of institutions from the ground up with the principles in this model. There are immense possibilities in the unknown future for the human condition to flourish if the right values and conditions are available through our institutions of higher learning.

5. Conclusion & Recommendations

The paper reiterates the need for coherent frameworks for AI to foster accessible and inclusive environments while focusing on wellbeing within higher education. These approaches range from highly centralized models to more distributed and participatory frameworks across various facets of meaningful participation in the governance of AI. This paper synthesises the narrative review of the literature to provide two guiding principles that can support human flourishing through governance, ethics, higher education, wellbeing and consciousness. The bi-directional relationship between these elements mutually supports human centricity in the rapid development and proliferation of AI. This is where the practice of freedom happens, where learning is critical and creative, empowering learners to transform their worlds.

The authors recommend more research is undertaken to further develop this model to ensure its adaptability across different geopolitical landscapes, while it already affords the possibilities of various cultural perspectives and inclusions. It is also recommended to operationalise the model through applied case studies, with reviews undertaken to consider implications for practice and where the model may be refined. This is a call to action to decision-makers and leaders to take bold steps to look after the human

condition through developing policies and procedures in relation to AI in higher education which will enshrine the development of human consciousness as its primary outcome.

6. Bibliography

Adams, C., Pente, P., Lemermeyer, G., & Rockwell, G. 2021. Artificial Intelligence Ethics Guidelines for K-12 Education: A Review of the Global Landscape. In: Roll, I., McNamara, D., Sosnovsky, S., Luckin, R., Dimitrova, V. (eds) *Artificial Intelligence in Education. AIED 2021. Lecture Notes in Computer Science*, vol 12749. Springer, Cham. https://doi-org.ezproxy.ecu.edu.au/10.1007/978-3-030-78270-2_4

Al-Tawil, R., & Hoven, D. 2024. "Threading Humanity Back into Education and Educational Research". *Open Praxis*, 16(2), 269–279. https://doi.org/10.55982/openpraxis.16.2.644

ASEAN. 2024. ASEAN Guide on AI governance and ethics. https://asean.org/wp-content/uploads/2024/02/ASEAN-Guide-on-AI-Governance-and-Ethics_beautified_201223_v2.pdf

Baethge, C., Goldbeck-Wood, S. & Mertens, S. 2019. "SANRA—a scale for the quality assessment of narrative review articles". *Res Integr Peer Rev*. 4(5). https://doi.org/10.1186/s41073-019-0064-8

Bearman, M., Ryan, J., & Ajjawi, R. 2023. "Discourses of artificial intelligence in higher education: a critical literature review". *Higher Education*, 86(2), 369–385. https://doi.org/10.1007/s10734-022-00937-2

Bearman, M., Tai, J., Dawson, P., Boud, D., & Ajjawi, R. 2024. "Developing evaluative judgement for a time of generative artificial intelligence". *Assessment & Evaluation in Higher Education*, 1–13. https://doi.org/10.1080/02602938.2024.2335321

Bozkurt, A. (2023). "Unleashing the potential of generative AI, conversational agents and chatbots in educational praxis:

A systematic review and bibliometric analysis of GenAI in education". *Open Praxis*, 15(4), 261–270. https://doi.org/10.55982/openpraxis.15.4.609

Brokensha, S., Kotzé, E., & Senekal, B. A. 2023. *AI in and for Africa: a humanistic perspective (First edition)*. CRC Press. https://doi.org/10.1201/9781003276135

Bruya, B., & Ardelt, M. 2018. "Wisdom can be taught: A proof-of-concept study for fostering wisdom in the classroom". *Learning and Instruction*, 58, 106–114. https://doi.org/10.1016/j.learninstruc.2018.05.001

Campos, F., Nguyen, H., Ahn, J., & Jackson, K. 2023. "Leveraging cultural forms in human-centred learning analytics design". *British Journal of Educational Technology*, 55(3), 769–784. https://doi.org/10.1111/bjet.13384

Department of Education. 2024. "Australian Framework for Generative Artificial Intelligence". https://www.education.gov.au/schooling/resources/australian-framework-generative-artificial-intelligence-ai-schools

Department of Industry, Science and Resources. 2023. "Australia's AI ethics principles. Australia's artificial intelligence ethics framework". https://www.industry.gov.au/publications/australias-artificial-intelligence-ethics-framework/australias-ai-ethics-principles

Di, X. 2020. "Understanding consciousness for optimal human wellbeing & growth holistically". *Educational Philosophy and Theory*, 52(14), 1503–1513. https://doi.org/10.1080/00131857.2020.1737016

Diamond, Z. 2021. "Old Pedagogies for Wise Education: A Janussian Reflection on Universities". *Philosophies*, 6(3), 64. https://doi.org/10.3390/philosophies6030064

Eke, D., Wakunuma, K., & Akintoye, S. 2023. "Introducing Responsible AI in Africa". In: Eke, D.O., Wakunuma, K., Akintoye, S. (eds)

Responsible AI in Africa. Social and Cultural Studies of Robots and AI. Palgrave Macmillan, Cham. https://doi.org/10.1007/978-3-031-08215-3_1

European Union. 2024. "The EU Artificial Intelligence Act". https://artificialintelligenceact.eu/

Fjeld, J., Achten, N., Hilligoss, H., Nagy, A. & Srikumar, M. 2020. "Principled Artificial Intelligence: Mapping Consensus in Ethical and Rights-Based Approaches to Principles for AI." *Berkman Klein Center Research Publication* No. 2020-1. http://dx.doi.org/10.2139/ssrn.3518482

Floridi, L. & Cowls, J. 2019. *A Unified Framework of Five Principles for AI in Society*. SSRN. http://dx.doi.org/10.2139/ssrn.3831321

Freire, P. 1970. "Pedagogy of the oppressed. Continuum." https://envs.ucsc.edu/internships/internship-readings/freire-pedagogy-of-the-oppressed.pdf

Gattupalli, S. & Maloy, R. 2024. "On Human-Centered AI in Education". *College of Education Working Papers and Reports Series*. 12. https://doi.org/10.7275/KXAP-FN13

Globethics. 2024. *Inclusive AI for a better future: Policy dialogue report*. Geneva: Globethics Publications. https://doi.org/10.58863/20.500.12424/4303017

Greenfield, N. 2024. Aligning AI with human values. University World News. https://www.universityworldnews.com/post.php?story=20240420082707500&utm_source=newsletter&utm_medium=email&utm_campaign=GLNL0783

Gunnlaugson, O., Sarath, E. W., Scott, C., & Bai, H. (Eds.). 2014. "Contemplative learning and inquiry across disciplines." State University of New York Press.

Hagendorff, T. 2020. "The Ethics of AI Ethics: An Evaluation of Guidelines". *Minds and Machines: Journal for Artificial*

Intelligence, Philosophy and Cognitive Science, 30(1), 99–120. https://doi.org/10.1007/s11023-020-09517-8

HAI. 2024. "Stanford University Human-Centered Artificial Intelligence." https://hai.stanford.edu/about

Jack, N. 2020. *The pedagogy of consciousness: pathways to education reform for urban youth culture*. Brill | Sense. http://public.eblib.com/choice/PublicFullRecord.aspx?p=6175847

Janssen, M., Brous, P., Estevez, E., Barbosa, L. S., & Janowski, T. 2020. "Data governance: Organizing data for trustworthy Artificial Intelligence". *Government Information Quarterly*, 37(3). https://doi.org/10.1016/j.giq.2020.101493

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

Julien, D. 2023. "We'll need to put Humanism at the Center of Generative AI to Reap its rewards." *Harvard Business Review*. https://hbr.org/sponsored/2023/06/well-need-to-put-humanism-at-the-center-of-generative-ai-to-reap-its-rewards

Ma Rhea, Z. 2018. "Buddhist pedagogy in teacher education: cultivating wisdom by skilful means". *Asia-Pacific Journal of Teacher Education*, 46(2), 199–216. https://doi-org.ezproxy.ecu.edu.au/10.1080/1359866X.2017.1399984

National Institute of Standards and Technology. 2024. "A plan for global engagement on AI standards." *U.S. Department of Commerce*. https://airc.nist.gov/docs/NIST.AI.100-5.Global-Plan.ipd.pdf

Nguyen, A., Ngo, H.N., & Hong, Y. 2023. "Ethical principles for artificial intelligence in education". *Educ Inf Technol*, 28, 4221–4241. https://doi.org/10.1007/s10639-022-11316-w

OECD. 2023. "Recommendations of the Council on Artificial Intelligence. OECD Legal Instruments." https://legalinstruments.oecd.org/en/instruments/oecd-legal-0449

OECD. 2024. "OECD AI Principles. OECD.AI." https://oecd.ai/en/dashboards/ai-principles/P6

OECD. 2024b. "OECD updates AI Principles to stay abreast of rapid technological developments". *Newsroom.* https://www.oecd.org/newsroom/oecd-updates-ai-principles-to-stay-abreast-of-rapid-technological-developments.htm

OpenAI. 2024, May 8. "Model Spec." https://cdn.openai.com/spec/model-spec-2024-05-08.html

Pae, C. 2015. "Why Systematic Review rather than Narrative Review?". *Psychiatry investigation*, 12(3), 417–419. https://doi.org/10.4306/pi.2015.12.3.417

Palmer, P. & Zajonc, A. 2010. *The heart of higher education*. Jossey-Bass.

Parsons, T. 2020. "Ethics and educational technologies". *Educational Technology Research and Development: A Bi-Monthly Publication of the Association for Educational Communications & Technology*, 69(1), 335–338. https://doi.org/10.1007/s11423-020-09846-6

Prinsloo, P., Khalil, M., & Slade, S. 2023. "A Critical Consideration of the Ethical Implications in Learning Analytics as Data Ecology". In: Viberg, O., Jivet, I., Muñoz-Merino, P., Perifanou, M., Papathoma, T. (eds) Responsive and Sustainable Educational Futures. EC-TEL 2023. *Lecture Notes in Computer Science, vol 14200*. Springer, Cham. https://doi-org.ezproxy.ecu.edu.au/10.1007/978-3-031-42682-7_25

Raman, A., & Flynn, M. 2024. "When your technical skills are eclipsed, your humanity will matter more than ever." *The New York Times*, (February 15, 2024).

Rampal, S., Smith, S. E., & Soter, A. 2022. "Wisdom in higher education: discussions with education academics utilising the Bhagavad Gita." *Qualitative Research Journal*, 22(3), 325-339. https://doi.org/10.1108/QRJ-12-2021-0133

Rebecchi, K. & Hagege, H. 2022. "Educating through attentional states of consciousness, and effective way to develop creative potential?". *Frontiers in Education*. Vol.7. https://doi.org/10.3389/feduc.2022.774685

Redman, S., Bauman, A., & Milat, A. 2015. "A narrative review of research impact assessment models and methods". *Health Research Policy and Systems*, 13(1), 1–7. https://doi.org/10.1186/s12961-015-0003-1

Selvaratnam, R., & Venaruzzo, L. 2023. "Governance of artificial intelligence and data in Australasian higher education: A snapshot of policy and practice. An ACODE Whitepaper." *Australasian Council on Open and Digital Education (ACODE).* Canberra. Australia. https://doi.org/10.14742/apubs.2023.717

Sharp, A. 2012. "Humanistic Approaches to Learning". In: Seel, N.M. (eds) *Encyclopedia of the Sciences of Learning*. Springer, Boston, MA. https://doi.org/10.1007/978-1-4419-1428-6_530

Southgate, E. 2020. "Artificial intelligence, ethics, equity and higher education: A 'beginning-of-the-discussion' paper". *Australian Centre for Student Equity and Success*. https://www.ncsehe.edu.au/publications/artificial-intelligence-ethics-equity-higher-education/

Søvik, A. O. 2022. "What overarching ethical principle should a superintelligent AI follow?" *AI & Society*, 37(4), 1505–1518. https://doi.org/10.1007/s00146-021-01229-6

Tang, X., Upadyaya, K., Toyama, H., Kasanen, M., & Salmela-Aro, K. 2023. "Assessing and Tracking Students' Wellbeing Through an Automated Scoring System: School Day Wellbeing Model". In: Niemi, H., Pea, R.D., Lu, Y. (eds) *AI in Learning: Designing the*

Future. Springer, Cham. https://doi-org.ezproxy.ecu.edu.au/10.1007/978-3-031-09687-7_4

Tasioulas, J. 2022. "Artificial Intelligence, Humanistic Ethics." *Daedalus*. 151(2), 232-243. https://doi.org/10.1162/daed_a_01912

Tawil, S. & Miao, F. 2024. "Steering the Digital Transformation of Education: UNESCO's Human-Centered Approach". *Frontiers of Digital Education*, 1(1), 51–58. https://doi.org/10.3868/s110-009-024-0005-6

Terrace, H. & Metcalfe, J. 2005. *The missing link in cognition: origins of self-reflective consciousness*. Oxford University Press.

Timofte, R. 2022. "Ethics and Privacy in Learning Analytics: The Rise of Chief Privacy and Chief Ethics Officers". In: Mâță, L. (eds) *Ethical Use of Information Technology in Higher Education*. EAI/Springer Innovations in Communication and Computing. Springer, Singapore. https://doi-org.ezproxy.ecu.edu.au/10.1007/978-981-16-1951-9_8

UNESCO. 2024. "Draft AI competency frameworks for teachers and for students." UNESCO. https://www.unesco.org/sites/default/files/medias/fichiers/2024/04/UNESCO-Draft-AI-competency-frameworks-for-teachers-and-school-students.pdf

UNESCO. 2024. "Towards an international instrument." *Ethics of Neurotechnology*. https://www.unesco.org/en/ethics-neurotech

Van Baal, S., Le, S., Fatehi, F., Verdejo-Garcia, A., & Hohwy, J. 2022. "Effecting behaviour change using an artificial intelligence chatbot: A pilot randomised controlled study". *PsyArXiv*. https://doi.org/10.31234/osf.io/2xuat

Van Norren, D. E. 2023. "The ethics of artificial intelligence, UNESCO and the African Ubuntu perspective". *Journal of Information, Communication and Ethics in Society*, 21(1), 112–128. https://doi.org/10.1108/JICES-04-2022-0037

Webb, M. 2024. "AI Maturity Model for Education". JISC National Centre for AI. https://nationalcentreforai.jiscinvolve.org/wp/2024/03/08/our-ai-in-education-maturity-model-an-update-for-2024/

World Economic Forum. 2024. "Shaping the future of learning: The role of AI in Education 4.0. Publications". https://www.weforum.org/publications/shaping-the-future-of-learning-the-role-of-ai-in-education-4-0/

Yang, S., Ogata, H., Matsui, T., & Chen, N. 2021. "Human-centered artificial intelligence in education: Seeing the invisible through the visible". *Computers and Education: Artificial Intelligence*, 2. https://doi.org/10.1016/j.caeai.2021.100008

7. Short biography

Dr Ratna Selvaratnam is currently the Manager for Learning Technologies and Innovation at Edith Cowan University in Perth, Australia. She is also the Treasurer on the Executive Board of the Australasian Council for Open and Digital Education (ACODE). She has published in the field of AI and ethics, gender and sustainability, microcredentials, and was a member of the working group that produced Australia's National Microcredentials Framework (NMF). Ratna is currently a member of the Pool of Experts on Ethics of Digital & Emerging Technologies, for the international organisation, Globethics. Ratna has extensive international higher education experience both as a professional and as a student across Australia, Malaysia, U.K. and the U.S. She is a Senior Fellow of the Higher Education Academy, Advanced HE.

Email: r.selvaratnam@ecu.edu.au

Lynnae Venaruzzo is the Director, Postgraduate Transformation at Western Sydney University, Australia. Lynnae is leading the design and development of differentiated learning experiences using novel digital Diaz pedagogical frameworks and innovative technologies including extended reality (XR), rich media and artificial intelligence to reshape how digital learning is delivered and experienced. Lynnae is curious about how technology enables

deep engagement and how we can create learning experiences that intrinsically motivate learners. Her curiosity is being extended through her research and doctoral work on motivation and self-regulated learning. Lynnae is a Senior Fellow of the Higher Education Academy, and an Executive member of ACODE, the peak Australasian council for technology-enabled learning.

Email: l.venaruzzo@westernsydney.edu.au