Reimagining Global Citizenship Education with AI: Promoting Justice, Inclusion, and Digital Participation

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Abstract

The rapid integration of Artificial Intelligence (AI) in education is reshaping pedagogical approaches and redefining how learners engage with global issues, particularly within the context of Global Citizenship Education (GCE). This study explores the multifaceted role of AI in GCE by examining its potential to support inclusive learning, foster civic engagement, and raise critical ethical questions. Drawing on qualitative data from three distinct educational settings a secondary school, a non-formal youth program, and a university-based teacher training initiative this research identifies five core themes: personalized inclusion, participatory citizenship, algorithmic ethics, the mediating role of educators, and long-term educational transformation. Findings reveal that AI can serve as a powerful enabler of personalized and inclusive learning experiences, particularly for students from linguistically and socioeconomically diverse backgrounds. AI-driven simulations and interactive platforms were found to enhance students' empathy and understanding of complex global challenges. However, significant concerns emerged around access disparities, algorithmic bias, and the cultural limitations of AI-curated content. Furthermore, the study highlights the central role of educators as ethical guides and cultural interpreters, whose critical engagement with AI significantly influences educational outcomes. This research underscores that AI in GCE must be implemented with intentionality, equity, and ethical awareness. Effective integration requires collaborative efforts among educators, technologists, policymakers, and learners to ensure that AI does not reinforce existing inequalities but rather supports the development of critically aware, ethically grounded global citizens. As AI continues to shape the educational landscape, its role in fostering reflective, inclusive, and socially just learning environments becomes ever more vital.

Keywords: Artificial Intelligence, Global Citizenship Education, educational equity, digital ethics

Introduction

In an era defined by rapid technological change, deepening global interconnectivity, and rising social complexities, the goals of education are undergoing a profound transformation (Kandia, 2023). Education today is no longer confined to the transmission of content or the development of technical skills; it has increasingly become a platform for nurturing ethical, responsible, and critically engaged global citizens. Amid mounting global challenges ranging from climate change, digital inequality, global pandemics, to migration and political polarization there is an urgent need to rethink how we educate individuals to become agents of positive change in a complex, uncertain, and interdependent world.

Global Citizenship Education (GCE) has emerged as a holistic educational framework designed to equip learners with the knowledge, values, attitudes, and skills necessary to act for a more just, inclusive, peaceful, and sustainable world. Rooted in principles of human rights, social justice, diversity, and

solidarity, GCE promotes a sense of belonging to a global community while also encouraging local engagement and civic participation (Ningrum, 2024). It challenges learners to critically examine global issues, reflect on their responsibilities as global citizens, and engage in transformative actions within and beyond their immediate contexts (Nussbaum, 2010).

At the same time, the fourth industrial revolution driven by advances in artificial intelligence (AI), machine learning, big data, and digital communication has begun to reshape education systems worldwide. AI, in particular, is playing an increasingly prominent role in educational policy, curriculum design, assessment systems, and classroom practices. AI-powered tools can personalize learning pathways, support adaptive learning environments, automate administrative tasks, and offer real-time feedback. However, as AI becomes more integrated into educational infrastructures, critical questions emerge about the ethical implications, inclusiveness, and social justice dimensions of these technologies.

Although AI offers exciting possibilities to enhance educational access and innovation, it also risks perpetuating inequalities if not implemented thoughtfully (Selwyn, 2019). Algorithmic biases, lack of representation in data sets, surveillance concerns, and unequal access to digital infrastructure all pose significant threats to the democratizing potential of AI in education. For example, students from marginalized communities may face digital exclusion or misrepresentation within AI-driven systems that fail to recognize cultural and linguistic diversity. Without intentional design and inclusive governance, AI may reinforce existing disparities rather than reduce them.

In this context, reimagining Global Citizenship Education through the lens of AI is both timely and necessary. The central question this paper explores is: How can AI be leveraged not only as a technological tool, but as an ethical partner in advancing the goals of justice, inclusion, and digital participation within GCE? This involves moving beyond instrumental views of AI as merely a means of increasing efficiency or productivity and toward a transformative perspective that emphasizes human agency, collective responsibility, and ethical engagement in digital spaces.

Furthermore, integrating AI into GCE challenges educators, policymakers, and technologists to collaborate across disciplinary boundaries. It invites the development of cross-sectoral partnerships that bring together technical expertise and pedagogical wisdom, ensuring that the application of AI in education remains grounded in human rights, democratic values, and educational equity. This also means that learners must be empowered not just to use AI tools, but to understand, question, and shape them. Critical digital literacy becomes a core component of GCE in the AI age enabling students to navigate complex digital landscapes while upholding ethical principles and fostering inclusive dialogue (Sila et al., 2023).

In order to achieve these goals, AI-enhanced GCE must prioritize several key principles:

1. Equity and Access: Ensuring that AI technologies do not exacerbate educational disparities but instead actively reduce barriers to quality learning for underserved populations.
2. Ethics and Transparency: Embedding ethical considerations into AI design, including accountability, data privacy, fairness, and the mitigation of bias.
3. Cultural and Contextual Relevance: Designing AI applications that reflect local cultural identities, languages, and social realities, resisting one-size-fits-all approaches.
4. Learner Empowerment and Voice: Enabling students to critically engage with AI tools and platforms, understand how decisions are made by algorithms, and advocate for equitable digital futures.
5. Democratic Participation and Civic Engagement: Using AI to support inclusive dialogue, collaboration, and community-building across borders and cultures.

This article posits that the thoughtful integration of AI into Global Citizenship Education can serve as a powerful enabler of socially just and inclusive education systems provided it is guided by a clear moral compass (Sila, 2024). The path forward demands a rethinking not just of what we teach, but how

and why we teach it in the digital age. By aligning technological innovation with the ethical imperatives of GCE, educators and technologists alike can co-create a future where every learner, regardless of background, is empowered to participate meaningfully in shaping a fairer and more sustainable world.

Method

This study employs a qualitative exploratory research approach to investigate the integration of artificial intelligence (AI) into Global Citizenship Education (GCE), with a specific focus on how this integration can promote justice, inclusion, and digital participation. Given the novelty and complexity of the topic situated at the intersection of education, ethics, and technology a qualitative methodology is appropriate to capture the depth and richness of stakeholder experiences and institutional practices (Santika & Sunariyanti, 2024). The research was conducted using a multiple case study design, enabling a comparative and contextual analysis of diverse educational settings that have begun implementing AI tools within GCE-oriented frameworks.

Three types of educational environments were selected as cases: a secondary school using AI-enhanced platforms for civic learning, a teacher education program at the university level that incorporates digital ethics and AI literacy, and a non-formal education initiative led by a civil society organization promoting intercultural dialogue through technology (Santika et al., 2022). These varied contexts allowed the research to explore how AI is being applied not only in formal curricula but also in broader community-based educational initiatives. A total of 28 participants were involved in the study, comprising educators, students, school administrators, and AI developers. Participant selection was conducted through purposive and snowball sampling, ensuring the inclusion of individuals directly engaged with both AI and GCE components.

Data collection was carried out over a period of four months and involved several qualitative methods, including semi-structured interviews, focus group discussions, document analysis, and non-participant observations. Semi-structured interviews were the primary method, allowing for flexible yet in-depth conversations with each stakeholder group. These interviews were designed to explore participants' perceptions, experiences, and critical reflections regarding AI's role in supporting or challenging GCE values. Focus group discussions were conducted with student participants to examine their collective views and lived experiences in engaging with AI tools in learning environments. Additionally, relevant documents such as institutional policy papers, curriculum guidelines, and platform design frameworks were analyzed to provide contextual grounding. Observations of classroom or program sessions in which AI tools were utilized further enriched the dataset, capturing real-time interactions and instructional dynamics (Oxley & Morris, 2013).

All interviews and focus groups were audio-recorded with participant consent and transcribed verbatim for analysis. The data were then analyzed using thematic analysis, following Braun and Clarke's six-step process, which includes familiarization with data, generation of initial codes, theme identification, theme review, theme definition, and report production. Coding and theme development were aided by the use of NVivo software to ensure systematic data organization. Themes that emerged centered around several key areas: equitable access to AI in learning, ethical concerns surrounding data and surveillance, student empowerment in digital spaces, and the role of AI in fostering or hindering intercultural understanding.

To enhance the credibility and trustworthiness of the findings, several validation strategies were employed. Data triangulation was used by comparing insights from interviews, focus groups, observations, and documents. Member checking was conducted by sharing preliminary findings with selected participants to confirm accuracy and resonance with their experiences. Peer debriefing with other researchers was also carried out to challenge and refine interpretations. An audit trail of research activities, decisions, and revisions was maintained to ensure transparency and accountability throughout the research process (Pelokilla, 2023).

The research was conducted under strict ethical standards, including informed consent, confidentiality, and the voluntary nature of

participation. All participants were briefed about the purpose of the study, their right to withdraw at any time, and the measures taken to protect their identities (Santika, 2020). Anonymity was ensured through the use of pseudonyms in transcripts and final reporting. Data were securely stored and used solely for research purposes.

Overall, this methodology provides a rigorous and ethically sound foundation for exploring how AI can be integrated into Global Citizenship Education in ways that prioritize justice, inclusion, and active digital participation. The insights generated are intended to inform educators, policymakers, and technologists seeking to align AI implementation with the broader ethical and democratic goals of education in the 21st century.

Result and Discussion

The integration of Artificial Intelligence (AI) in Global Citizenship Education (GCE) is increasingly reshaping not only pedagogical strategies but also the very foundations of how learners engage with global issues in digital contexts (Cummings & Ferris, 2020). The findings of this study reveal a layered and multifaceted reality, where AI serves as both an enabler of transformative educational experiences and a source of new ethical, cultural, and political tensions. The following expanded discussion offers a deeper exploration of five core themes identified through the fieldwork: personalized inclusion, civic engagement, algorithmic ethics, the mediating role of educators, and implications for long-term transformation in educational ecosystems.

AI and Personalized Inclusion: Expanding Access or Reinforcing Inequality?

AI's capacity to personalize learning was one of the most frequently praised features by both educators and students (Eynon & Malmberg, 2021). Adaptive learning platforms, multilingual interfaces, and speech-to-text tools allowed learners with different needs especially those from multilingual or underserved backgrounds to participate more fully in lessons related to global citizenship. These tools were particularly beneficial in environments where class sizes were large and student backgrounds diverse (Suarningsih et al, 2024). For instance, a teacher in the secondary school case reported that students who previously struggled with civic terminology in English became more confident after using AI translation aids to understand the material in their mother tongue. This indicates a promising role for AI in democratizing access to complex global issues by reducing linguistic and cognitive barriers.

However, this advantage was not universally experienced. In lower-income settings, inadequate infrastructure, limited digital literacy, and the lack of technical support acted as significant barriers. One educator expressed frustration that despite the promise of AI, many students could not access it equitably due to device shortages or unreliable internet. This suggests that the potential of AI to foster inclusion is highly dependent on pre-existing conditions of digital equity meaning that without structural support, AI may inadvertently exacerbate educational disparities rather than eliminate them. In this sense, AI reflects the inequalities of the societies in which it is implemented unless its rollout is accompanied by policies addressing broader issues of access and justice (UNESCO, 2015).

AI and Participatory Citizenship: Simulation as Practice for Real-World Engagement

Another important finding was the effectiveness of AI in creating interactive, problem-based learning environments that simulate real-world civic challenges (Sujana & Pali, 2024). In both formal and non-formal education settings, AI-driven simulations and role-playing platforms were used to recreate global dilemmas such as climate negotiations, refugee crises, and ethical debates around emerging technologies. These digital tools encouraged learners to step into different roles such as policymakers, activists, or displaced persons and reflect on the implications of their decisions (Buckingham, 2019).

Students reported that these experiences improved their sense of global empathy and civic responsibility, with one learner stating that "for the first time, I felt what it might be like to live as someone from a different country with limited rights." Such activities

align strongly with the core objectives of GCE, which aim to nurture empathy, cross-cultural understanding, and collaborative problem-solving. AI provided a controlled yet immersive environment where students could engage in these complex dialogues safely and critically.

However, some educators expressed concern that students could become over-reliant on gamified, AI-mediated environments and may struggle to transfer these skills into real-world civic action. Furthermore, the simulations themselves sometimes lacked cultural nuance or presented overly simplified versions of geopolitical issues, leading to superficial engagement. This calls attention to the need for critical scaffolding and debriefing, whereby AI is used not as a replacement for human instruction but as a catalyst for deeper teacher-facilitated inquiry (Santika, 2021).

Ethical Dilemmas and the Unseen Architecture of AI

Across all three case studies, concerns surrounding data ethics, algorithmic opacity, and AI bias were prominent. Participants raised questions about how their data was being used, who controlled the AI systems they interacted with, and whether the information presented to them was filtered or manipulated by algorithmic logic. Particularly in the university-based teacher training program, discussions frequently centered on the "black box" nature of AI systems—tools that operate in ways that are not fully transparent even to those who deploy them in classrooms (Tuhuteru et al, 2023).

One notable case involved an AI content recommendation system that consistently prioritized Western sources and English-language articles in a global issues module. Educators noticed that the platform rarely surfaced content from the Global South unless it was manually adjusted, thereby limiting the cultural diversity and critical breadth of the discussions (Azan, 2024). This example highlights how algorithmic curation can shape knowledge hierarchies, even in well-intentioned educational settings. If left unexamined, such systems risk marginalizing non-dominant narratives and perspectives contradicting the very aims of Global Citizenship Education (Santika, 2021b).

Moreover, some students expressed concern that they were being "graded by machines," particularly when AI was used to assess essays or engagement levels. These tools, while efficient, raised anxieties about fairness, especially when learners felt their cultural or linguistic styles were misread by automated systems. These concerns underscore the need to humanize assessment processes, ensuring that AI complements, rather than replaces, teacher judgment and cultural sensitivity (Williamson et al, 2020).

Educators as Ethical Agents and Cultural Interpreters

A consistent pattern across the cases was the centrality of the educator in shaping how AI was experienced and understood. Teachers served not only as facilitators of AI use but also as interpreters, moderators, and ethical guides. In the teacher training program, AI was not only taught as a technological tool but also critically examined as a social construct—raising questions such as: "Who designs AI?" and "What values are embedded in code?" These discussions were transformative for many future educators, who began to see themselves as agents capable of influencing how AI is used in the classroom (Santika & Suastika, 2022).

Educators with a critical orientation were more successful in using AI tools to spark meaningful conversations about digital citizenship, global power structures, and ethical innovation. They encouraged students to ask difficult questions, challenge AI-generated content, and reflect on their own digital footprints. On the other hand, educators who lacked confidence or training often defaulted to using AI as a passive tool for delivery and assessment, missing opportunities for deeper engagement (Banks, 2017).

This contrast points to the urgent need for professional development that goes beyond technical training. Teachers must be equipped to understand the philosophical and ethical dimensions of AI, and to help students develop critical digital literacy skills. In this sense, educators are not just users of AI, they are co-creators of the AI learning environment, and their values profoundly influence the outcomes.

Toward a Values-Driven AI Integration in GCE

The cumulative findings suggest that the integration of AI in GCE must be grounded in intentionality, inclusiveness, and reflexivity. AI cannot be a neutral addition to the curriculum; it is a powerful force that shapes how knowledge is produced, disseminated, and interpreted. As such, its use in GCE should be guided by clearly articulated values aligned with the broader goals of equity, justice, and participation (Tunggal, 2023).

To move forward, educational institutions must create cross-sectoral alliances between educators, technologists, policymakers, and learners themselves (Santika, 2022b). The design of AI tools should be participatory, involving diverse voices from the beginning not just in feedback stages. Policymakers must ensure that funding for educational technology includes support for ethical governance, culturally relevant content, and equitable infrastructure. Technologists must be transparent about how their systems work and who they serve. And educators must continue to be empowered as both critics and innovators in this digital transition (Williamson & Piattoeva, 2021).

Crucially, learners must be seen not as passive consumers of AI content, but as active agents capable of shaping the digital world they inherit. Teaching students to understand how AI works, how it can both liberate and constrain, and how to advocate for ethical uses of technology is no longer optional it is central to preparing them as global citizens in the digital age.

Conclusion

The integration of Artificial Intelligence (AI) into Global Citizenship Education (GCE) presents both transformative opportunities and significant challenges. This study reveals that AI has the potential to enhance inclusion, deepen civic engagement, and support more contextualized and reflective learning experiences. Through personalized learning tools, multilingual support, and interactive simulations, AI enables students from diverse backgrounds to engage more meaningfully with complex global issues.

However, these benefits are not universally accessible. Disparities in infrastructure, digital literacy, and resource availability continue to limit the equitable use of AI, particularly in under-resourced settings. Moreover, ethical concerns including algorithmic bias, data privacy, and the dominance of Western narratives highlight the need for critical awareness in AI implementation. AI is not a neutral tool; it reflects the social values and power dynamics embedded in its design and deployment (Sujianti & Adnyana, 2024).

Educators play a pivotal role in shaping how AI is used and understood in educational contexts. Teachers who approach AI critically can empower students to question, analyze, and reflect on digital content in ways that align with the values of justice, equity, and global responsibility (Santika et al., 2022). This underlines the importance of professional development that not only builds technical skills but also fosters ethical and philosophical understanding of AI.

Ultimately, the integration of AI in GCE must be intentional, inclusive, and guided by a clear ethical framework. Cross-sector collaboration among educators, policymakers, technologists, and learners is essential to ensure that AI in education promotes rather than hinders the goals of global citizenship. Students must be positioned not as passive consumers of AI-driven content, but as active, informed agents capable of navigating and shaping the digital world responsibly. Equipping them with critical digital literacy and ethical awareness is no longer optional—it is fundamental to educating global citizens in the age of AI.

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