



# To be (or not to be) a global citizen in an algorithmic world? A cartographic, ethical and reflexive framework for higher education

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## Abstract

As generative artificial intelligence (GenAI) reshapes educational priorities, governance and pedagogical norms, global citizenship education (GCE) in higher education (HE) faces intensifying tensions between ethical imperatives and algorithmic rationalities. This article offers a human-centred, critical-decolonial reframing of GCE in the era of artificial intelligence (AI). It argues that the dominant approaches to GCE risk reinforcing neoliberal, technocratic and universalist assumptions. Drawing on the work of Vanessa Andreotti, Sharon Stein, Emiliano Bosio and Paulo Freire, the article advocates for an alternative grounded in relational ethics, epistemic plurality and institutional reflexivity. Employing *critical interpretive synthesis* and guided by the performative tool of *social cartography*, the authors developed a ten-dimension framework for institutional self-reflection. Rather than framing GCE as a fixed set of global competencies, this framework reimagines it as a dynamic pedagogical project grounded in care, shared responsibility and ethical dialogue. It responds to the structural inequities amplified by AI integration, foregrounds the risks of AI-mediated depersonalisation and invites HE institutions to implement GCE as a dynamic space for justice-oriented learning and collective flourishing.

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## Résumé

Être (ou ne pas être) un citoyen global dans un monde algorithmique ? Un cadre cartographique, éthique et réflexif pour l'enseignement supérieur – Alors que l'intelligence artificielle générative (IA générative) redéfinit les priorités éducatives, les modes de gouvernance et les normes pédagogiques, l'éducation à la citoyenneté mondiale dans l'enseignement supérieur se voit confrontée à des tensions croissantes entre impératifs éthiques et rationalités algorithmiques. Le présent article propose un recadrage critique et décolonial, axé sur l'humain, de l'éducation à la citoyenneté mondiale à l'ère de l'intelligence artificielle (IA). Il affirme que les approches dominantes de l'éducation à la citoyenneté mondiale risquent de renforcer des présupposés néolibéraux, technocratiques et universalistes. En s'appuyant sur les travaux de Vanessa Andreotti, Sharon Stein, Emiliano Bosio et Paulo Freire, l'article plaide en faveur d'une alternative fondée sur l'éthique relationnelle, la pluralité épistémique et la réflexivité institutionnelle. Recourant à une *synthèse interprétative critique* et guidées par l'outil performatif de la *cartographie sociale*, les autrices ont élaboré un cadre d'autoréflexion institutionnelle en dix dimensions. Plutôt que de concevoir l'éducation à la citoyenneté mondiale comme un ensemble figé de compétences globales, ce cadre la réinvente sous forme de projet pédagogique dynamique, ancré dans le soin (care), la responsabilité partagée et le dialogue éthique. Il répond aux inégalités structurelles exacerbées par l'intégration de l'IA, insiste sur les risques de déshumanisation induits par l'IA et invite les établissements d'enseignement supérieur à mettre en œuvre l'éducation à la citoyenneté mondiale comme un espace dynamique d'apprentissage dans une optique de justice et d'épanouissement collectif.

## Introduction

This article critically re-examines global citizenship education (GCE) in higher education (HE) amid the accelerating influence of generative artificial intelligence (GenAI) and prevailing neoliberal frameworks. While GCE aspires to foster equity, intercultural understanding and transformative global engagement, its institutional implementation remains entangled with Western-centric narratives, power asymmetries and market-driven logics (Andreotti 2011; Marginson 2023a). In this context, the integration of artificial intelligence (AI) technologies introduces both opportunities and ethical risks – raising urgent questions about human agency, epistemic justice and the future of inclusive education in what Mirko Schäfer and Karin van Es (2017) define as *datafied society*, where culture, governance and identity are shaped by data infrastructures.

We propose a theoretically grounded conceptual framework that foregrounds ethical relationships, intercultural dialogue and human connection in digitally mediated learning environments (Bosio and Schattle 2023). Drawing on critical and decolonial perspectives, we aim to reframe GCE not as a fixed set of competencies, but

as a contested and evolving field of practice. In doing so, we challenge taken-for-granted assumptions and advance a human-centred approach that resists technological instrumentalism. We are especially guided by Sharon Stein’s (2015) critique of cosmopolitan GCE imaginaries and Vanessa Andreotti’s (2011) call for epistemic humility and decolonial inquiry, which help illuminate how structural forces shape what counts as “global citizenship” and who is positioned to enact it.

Rather than assuming consensus around the meaning or purpose of GCE, we build on *social cartographies* (Andreotti et al. 2016) as both a theoretical and methodological stance. Social cartographies reject the impulse to resolve contradictions or establish fixed definitions. Instead, they illuminate how different discourses – liberal, neoliberal, critical and decolonial – coexist, compete and overlap within global education. Through this lens, our framework is not presented as a universal blueprint, but as one situated map among many – reflecting a relational, reflexive and context-sensitive approach to GCE. By acknowledging this multiplicity from the outset, we align with scholarship that cautions against the uncritical reproduction of hegemonic narratives in global education (Pashby et al. 2020; Oxley and Morris 2013).

We argue that while technological advancements offer powerful avenues for global interconnection, they must be approached with critical care and ethical intentionality. Authentic global citizenship cannot be fostered through digital reach alone; rather, it emerges through relational encounters, embodied experiences and sustained intercultural dialogue. These human elements must not only be safeguarded but actively cultivated amid the rise of AI and digital education. To contextualise our contribution to the field of GCE, we first revisit the traditional conceptual architecture of GCE in HE, which centres on core components – ethical–political foundations, cultural–social perspectives, institutional context and pedagogical approaches – and the external forces that shape them, including power dynamics, global inequalities and digital integration (see Figure 1). This foundational perspective sets the



Figure 1 Changing the GCE paradigm: towards a cartographic, ethical and reflexive approach

stage for the critical shift we propose through the Cartographic, Ethical and Reflexive (CER) framework.

## Research scope and approach

In this study we employed a *critical interpretive synthesis* (CIS) methodology to examine the evolving landscape of GCE in HE, with particular attention to the intersection of GenAI, decolonial theory and critical pedagogy. CIS, a qualitative approach combining systematic and integrative review techniques with interpretive analysis, is particularly suited for developing new theoretical insights through a critical and iterative engagement with diverse scholarly, policy and empirical sources. In response to critiques by Annette Bamberger and Paul Morris (2024), who argue that critical GCE literature often imposes binary frames and downplays local agency, we adopted a dialogic CIS approach that values disagreement and seeks to map tensions rather than resolve them into ideological consensus. Guided by the work of Andreotti (2011) and Stein (2015), our work explores how dominant frameworks of GCE may reproduce epistemic hierarchies and how alternative imaginaries – such as decolonial, ethical and human-centred perspectives – can challenge these tendencies. Using Stein’s social cartography<sup>1</sup> and Andreotti’s HEADS UP heuristic<sup>2</sup> as conceptual anchors, we interrogate how global citizenship is constructed within datafied, AI-enhanced educational systems, and what is at stake for equity, inclusion and human agency. To guide this inquiry, the article explores four interrelated research questions (RQs):

- RQ1 *How can HE institutions reconcile AI-driven efficiency with the ethical–relational commitments central to GCE?*
- RQ2 *What forms can epistemic justice take in AI-mediated learning environments, and how might it shape inclusive and pluralistic educational design?*
- RQ3 *How might social cartography serve both diagnostic and transformative roles in institutional self-reflection?*
- RQ4 *What would it mean to adopt a human-centred ethical orientation when integrating AI into GCE frameworks and practices?*

These questions shaped the development of a cartographic, ethical and reflexive (CER) framework for GCE in the AI era. The CER framework – presented conceptually in Figure 1 and grounded in critical, decolonial and human-centred theory

<sup>1</sup> In a nutshell, social cartography is a methodology which involves creating maps “that enable provisional visual depictions of difference between and within intellectual communities. These maps allow for multiple ways of seeing to be simultaneously acknowledged, affirmed and addressed in their inevitable particularity and partiality, without imposing demands for immediate resolution or consensus” (Andreotti et al. 2016, pp. 86–87, with reference to Rolland G. Paulston; see also Paulston 2000).

<sup>2</sup> The acronym HEADS UP stands for Hegemony, Ethnocentrism, Ahistoricism, Depoliticisation, Self-congratulatory and self-serving attitude, Un-complicated solutions and Paternalism (Andreotti 2016).

– is translated into practice through the institutional self-reflection matrix in Table 2, which serves as a tool for navigating ethical, pedagogical and technological tensions.

### Literature selection and inclusion criteria

In alignment with CIS, we adopted an integrative literature review approach in a systematic manner to identify sources that offer conceptual depth and theoretical innovation, while also “mitigating algorithmic biases in terms of gender, and geographical representation and exclusion in scholarly databases, which tend to be present in systematic reviews” (Atenas et al. 2023, p. 275). Rather than limiting our review to empirical studies alone, we prioritised works that advance new ways of thinking about GCE, AI and HE through critical and decolonial lenses (see Figure 2).

*Inclusion criteria:*

- Peer-reviewed publications or seminal theoretical texts (1970–2024).
- Literature addressing GCE in HE or adjacent fields (e.g., educational technology, critical pedagogy, epistemic justice).
- Works grounded in critical, decolonial, ethical or reflexive frameworks.
- Research that engages the implications of AI or digital transformation for education, equity and epistemology.

*Exclusion criteria:*

- Non-English sources.
- Studies focused exclusively on primary or secondary education.
- Works with no substantive engagement with ethical, epistemological or decolonial concerns.
- Opinion pieces lacking scholarly or conceptual rigour.

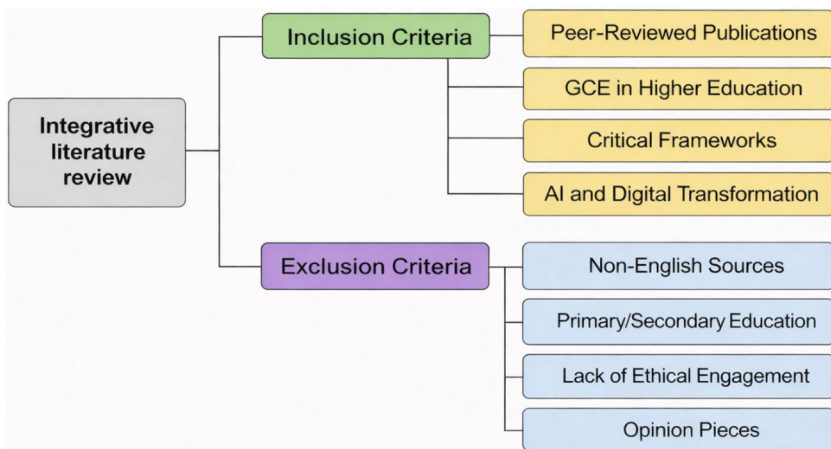


Figure 2 Integrative literature review: inclusion and exclusion criteria

## Literature identification strategy

Consistent with the logic of CIS, the identification of literature was guided by conceptual relevance rather than exhaustive searching. We engaged iteratively with key scholarly works – both foundational and contemporary – across GCE, decolonial theory, critical pedagogy and AI in education. Seminal contributions were identified through citation trails, purposive sampling and conceptual mapping, allowing us to develop a framework that reflects the tensions, innovations and ethical imperatives within AI-mediated global education. Drawing on key contributions from Andreotti (2011), Stein (2015), Bosio (2023a) and others, we synthesised insights into a ten-dimension framework for institutional self-reflection.

Social cartography, as conceptualised by Andreotti et al. (2016), was central to both our analytical and methodological design. Methodologically, it guided our CIS by mapping tensions rather than seeking consensus – essential when examining GCE's contested nature. Theoretically, it provided a lens for understanding GCE as a contested field where multiple discourses coexist without requiring resolution. Practically, it informed the framework's design as a reflective tool rather than a prescriptive checklist. This approach is essential because AI integration amplifies existing tensions between efficiency- and ethics-oriented educational paradigms, requiring frameworks that can navigate complexity rather than impose singular solutions. By employing social cartography, we acknowledge that institutions operate within ambivalent assemblages where liberal, neoliberal, critical and decolonial orientations coexist – making prescriptive frameworks inadequate for the nuanced realities of AI-mediated GCE.

## Positioning the CER framework within the literature

Beyond foundational theoretical texts, we drew selectively on recent empirical and conceptual work that illustrates how technology reshapes global learning environments. UNESCO's *Global Practices Evaluation & Assessment Toolkit: Advancing Artificial Intelligence-Supported Global Citizenship Education* (UNESCO IITE and SOU 2023), for instance, offers a policy-oriented perspective that we critique and reframe through a decolonial ethical lens. The systematic review by João Batista et al. (2024) and institutional analysis by Evangelos Katsamakos et al. (2024) provide valuable insights into how AI is integrated into HE governance. Similarly, equity-focused reports – such as *The Potential Impact of Artificial Intelligence on Equity and Inclusion in Education* (Varsik and Vosberg 2024) from the Organisation for Economic Co-Operation and Development (OECD), and the United Nations 2030 Agenda for Sustainable Development (UNGA 2015) with its fourth Sustainable Development Goal (SDG 4) dedicated to education – showcase the urgent need to address structural barriers to inclusion. These sources informed our cartographic framework by highlighting the practical tensions and normative stakes of AI-mediated GCE.

## Theoretical framework: decolonial and critical perspectives on GCE in the AI era

This article contributes to the evolving field of GCE in four key dimensions. First, it introduces the concept of *techno-pedagogical tensions* to describe the friction between AI's efficiency-driven logic and GCE's emphasis on relational, ethical and contextual learning. Second, it advances the notion of *post-technocratic thinking* – a critical lens that interrogates the sociotechnical imaginaries of AI through decolonial and human-centred frameworks. Third, it adapts *social cartography* from a primarily theoretical construct into a performative, reflexive tool for institutional self-assessment. Finally, it articulates *human-centredness* not only as an ethical imperative, but as a practical orientation for preserving agency, intersubjectivity and wisdom within increasingly datafied educational environments. These contributions frame the theoretical discussion that follows and are visually synthesised in Figure 3, which presents the four conceptual pillars underpinning our framework.

At the heart of this theoretical orientation is a critique of liberal and neoliberal narratives that frame GCE as a vehicle for soft power, employability or international branding. Harriet Marshall (2011) and Wiel Veugelers (2011) trace the dual origins of GCE to both moral idealism and policy-driven globalisation agendas, revealing an enduring tension between humanistic aspirations and technocratic rationalities. While such accounts remain foundational, contemporary theorists have moved beyond description to critique. Andreotti (2011) articulates a clear distinction between “soft” and “critical” approaches to GCE. *Soft GCE* emphasises empathy, global awareness and charity, yet often reinforces paternalistic and universalist assumptions. In contrast, *critical GCE* fosters historical consciousness, complicity awareness and the interrogation of power – challenging learners to recognise their embeddedness in global systems of inequality (ibid.).

Stein (2015) builds on this critical tradition by introducing a cartographic methodology that identifies multiple orientations within GCE – liberal, neoliberal, critical and decolonial – and maps their overlapping, ambivalent and often contradictory discursive logics. Rather than collapsing these tensions into a singular normative stance, Stein advocates for epistemic humility and the use of performative tools that help actors situate themselves within complex ethical terrains. This approach is further elaborated by Andreotti et al. (2016), who develop social cartographies as

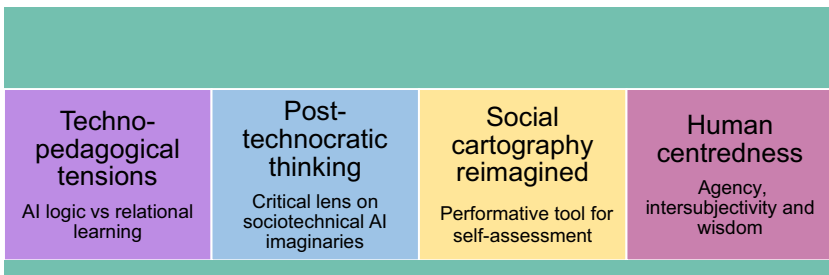


Figure 3 GCE dimensions in AI education

pedagogical devices that expose the limits of universalism and encourage reflexive engagement with the ambiguities of global learning.

Emiliano Bosio and Hans Schattle (2023) critique market-driven conceptions of GCE that reduce global citizenship to employability and instrumental self-interest, proposing instead an ethical framework grounded in values-creation, collective involvement, and reflexive pedagogy oriented towards social responsibility, justice and shared humanity. Bosio and Schattle (ibid.) argue for a values-driven GCE that fosters ethical relationality, collective involvement and the development of critical consciousness. Their framework introduces dimensions such as intellectual humility, compassion and shared purpose as central to pedagogical transformation. Importantly, these contributions align closely with Andreotti's decolonial critique, yet offer a forward-looking ethical vision grounded in praxis, not just critique.

We build upon these traditions by proposing a CER framework for GCE in the AI era. Our proposed framework resists the logic of standardisation and instrumentalisation that pervades both GCE and AI implementation in HE. Instead, it aligns with Andreotti's call for "walking ... the edge of ... theory" (Andreotti 2011, p. 381) – that is, maintaining epistemic humility and acknowledging the partiality of one's framework – foregrounding relational accountability and holding ethical tension without premature resolution. Simultaneously, it draws on Bosio's emphasis on educational environments infused with empathy, courage and dialogic engagement – particularly as these values are threatened by the depersonalising forces of digital surveillance, algorithmic decision-making and platform capitalism (the corporate ownership and monetisation of digital platforms through the extraction of user data and behavioural analytics for profit).



**Figure 4** CER interrelated commitments

Crucially, the CER framework situates GCE not as a content area or set of competencies, but as a contested and dynamic field of ideological negotiation. It foregrounds three interrelated commitments (visually synthesised in Figure 4):

- (1) A decolonial orientation that problematises the Eurocentric epistemologies embedded in global education discourse and prioritises epistemic justice (Mignolo 2000; Santos 2007; Maldonado-Torres 2004).
- (2) A critical pedagogical orientation that sees education as a transformative space for interrogating social injustices and cultivating political agency (Freire 1970; Giroux and Bosio 2021; McLaren and Bosio 2022).
- (3) A human-centred ethical orientation that values affective engagement, emotional resilience and intersubjectivity as essential to global citizenship, particularly in the face of AI-driven depersonalisation (Bosio 2023b; Gardner-McTaggart and Palmer 2018; Helm et al. 2024).

Together, these commitments inform the design of a reflexive and situated framework for institutional self-assessment in GCE. Rather than prescribing normative benchmarks or universal metrics, the framework operates as a performative mapping device – one that helps institutions locate their values, contradictions and aspirations within broader political, technological and ethical terrains. This approach not only advances the field of GCE theoretically, but also offers practical pathways for re-imagining HE as a space of relational transformation in an increasingly algorithmic world.

### **Critical approaches: power, coloniality and the politics of global citizenship**

GCE does not unfold in a neutral terrain; rather, it is deeply entangled with systems of power, historical marginalisation and epistemic privilege. Maria Balarin (2011) argues that dominant framings of GCE often reinforce rather than disrupt global inequalities, as marginalised communities are rendered peripheral – or entirely invisible – in the global citizenship narrative. Such exclusions are not accidental but reflect what decolonial scholars term the *coloniality of power* (Quijano 2000) and epistemic racism that positions Western knowledge as universal (Maldonado-Torres 2004). This critique is furthered by Stein (2015), who interrogates the cosmopolitan ideal often embedded in GCE discourse, noting that it tends to serve elite mobility and reproduce colonial hierarchies under the guise of global responsibility.

Rather than dismantling privilege, GCE – when uncritically applied – can entrench a sense of moral superiority rooted in modernist and Eurocentric imaginaries. As Andreotti (2011) contends, it can project global citizenship as a *missionary orientation*, offering solutions to “others” rather than reflecting on one’s implication in systems of injustice. Lynne Parmenter (2011) complements this view by showing how GCE is spatially and contextually constructed, with dominant actors controlling both the narrative and the curriculum. This power over “what counts” as global citizenship knowledge calls for pedagogical models that do not merely include alternative perspectives but restructure the epistemological foundations of GCE. Similarly,

Jonathan Friedman (2018) identifies generational shifts in how GCE is understood and embraced, suggesting that these divergences offer an entry point for reflexive engagement – but only if they are not flattened into universalist youth narratives.

Karen Pashby and Vanessa Andreotti (2016) provide a methodological and theoretical intervention by introducing social cartography as a way to map divergent orientations of internationalisation in HE, illustrating how neoliberal, liberal and critical discourses often operate in ambivalent assemblages, where inclusive language is deployed to serve market agendas. For example, initiatives framed around diversity and global competence may, in practice, serve institutional branding or reinforce Global North dominance. This echoes Andreotti et al.'s (2016) argument that social cartographies help reveal the edges and tensions between different orientations – especially those that *appear critical* but function within the bounds of the dominant imaginary. While foundational to the field, the decolonial frameworks of Andreotti and Stein have not gone unchallenged. Bamberger and Morris (2024) offer a pointed critique of their reliance on the modern/colonial global imaginary, arguing that such framings risk Western exceptionalism and overlook multipolar geopolitical dynamics and local forms of domination. They warn that postcolonial critiques, while illuminating colonial continuities, may inadvertently obscure the agency of non-Western actors and fail to address authoritarian or exclusionary practices emerging outside the West.

This perspective invites us to remain reflexive not only about colonial legacies but also about the limitations of critical theory – particularly when it universalises Western frameworks of resistance while under-examining power asymmetries in diverse global contexts. A key concern raised by Bamberger and Morris (2024) is that some critical and decolonial GCE literature reproduces a simplified binary between the Global North/West as hegemonic and the Global South as inherently oppressed. While such framings have been essential for surfacing colonial continuities, they risk overlooking the heterogeneity and complexity of global power relations. Their critique invites a move beyond West-centrism towards a more geopolitically plural understanding of domination, one that holds all systems of epistemic control and political repression accountable, regardless of geographic location. Integrating this insight strengthens GCE's capacity to respond to injustice wherever it emerges and helps avoid reifying the very binaries critical theory seeks to dismantle.

Judy Bruce et al. (2019) demonstrate how these ambiguities play out in practice: although many educators support the idea of GCE, their understanding often remains limited to surface-level concepts such as cultural celebration or exchange. This flattening of critical discourse into safe, apolitical narratives highlights the urgency for HE to embrace complexity, historical consciousness and structural critique. Bamberger and Morris (2024) and Mira Yemini and Netta Sagie (2016) echo this in their analyses of internationalisation strategies, showing that while some institutions pursue the transformative potential of GCE, others instrumentalise it in service of economic imperatives and prestige logics. The result is a fractured field in which the language of justice coexists with systems that perpetuate post-colonial inequalities and neoliberal values. Malcolm Tight (2022) offers a hopeful counterpoint by documenting how non-Western institutions are increasingly redefining internationalisation to reflect their own cultural logics and priorities. This shift

illustrates the possibility of pluralising GCE beyond Western paradigms, aligning with the relational and contextual commitments advocated in critical and decolonial frameworks.

Figure 5 maps the transition from diagnosis to transformation, highlighting how intersecting power relations, epistemic hierarchies and institutional responses shape the contested landscape of GCE. The literature reveals that GCE is not only contested but structurally uneven, shaped by intersecting dynamics of knowledge production, institutional power and historical privilege. Decolonial scholars diagnose these dynamics through the lens of coloniality of power (Quijano 2000; Maldonado-Torres 2004), while Andreotti (2011) identifies a persistent missionary orientation in GCE that frames the Global North as benevolent agent and the Global South as recipient. Stein (2015) further exposes how cosmopolitan ideals in GCE tend to serve elite mobility and reproduce colonial hierarchies, and Parmenter (2011) shows how dominant actors control both the narrative and curriculum of global citizenship.

These diagnoses are complicated by the fact that institutional practice rarely operates within a single discursive logic. As Andreotti et al. (2016) demonstrate through social cartography, liberal, neoliberal and critical discourses often co-exist in ambivalent assemblages – where inclusive language may serve market agendas and critical vocabulary can be co-opted for branding purposes. Bruce et al. (2019) illustrate this at the pedagogical level, showing that many educators support GCE in principle yet reduce it to surface-level cultural celebration. Meanwhile, scholars such as Bamberger and Morris (2024), Tight (2022) and Yemini (2023) document how non-Western institutions are beginning to reclaim and redefine internationalisation beyond Northern paradigms, though often still constrained by structural inequalities. Stein and Andreotti (2016) offer a useful typology of institutional responses to coloniality in HE: inclusionary, reformist and ontological. Inclusionary responses focus

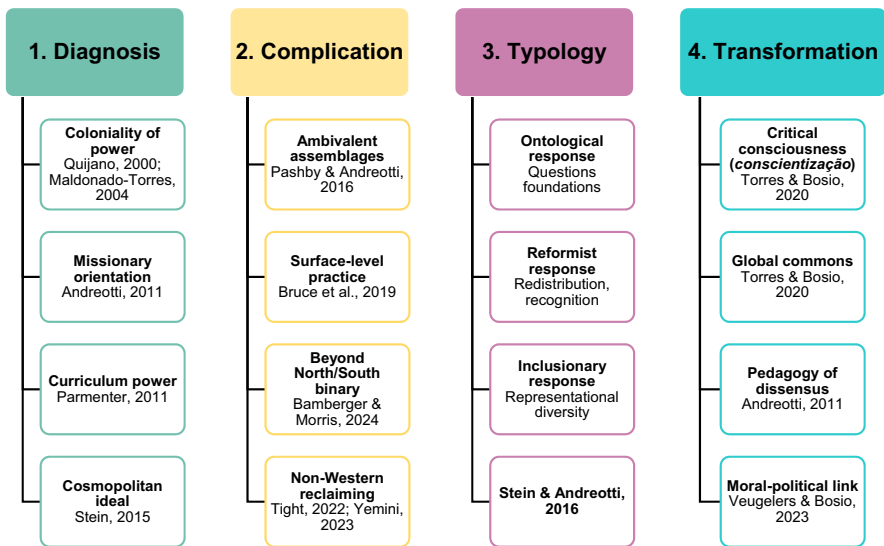


Figure 5 From diagnosis to transformation: power, critique and institutional response in GCE

on representational diversity and curriculum add-ons without challenging dominant power structures. Reformist approaches aim for systemic change through redistribution and recognition but still operate within institutional logics of modernity and can be easily co-opted. Ontological responses, by contrast, question the very foundations of the university as a colonial institution, emphasising the need to imagine alternative futures beyond the existing order of knowledge. This typology showcases the limits of liberal and technocratic framings of GCE and helps position our framework within a broader project of ethical, epistemic and institutional transformation.

To move beyond these limits, critical GCE must embrace a pedagogy of dissensus (Andreotti 2011), use tools like social cartography to map and negotiate competing logics, and foster relational accountability as a core principle of global learning. This imperative is further supported by Carlos Torres and Emiliano Bosio (2020), who emphasise the need to cultivate critical consciousness (*conscientização*) – in Freirean terms – as the foundational mission of GCE. For them, education for global citizenship must go beyond service delivery or skills acquisition to promote learners' emancipation, enabling them to perceive, denounce and ultimately transform the social and political contradictions that sustain global inequities. Their framing of the global commons expands the idea of shared planetary resources to include democracy, knowledge and peace – human achievements that must be collectively protected and sustained. The commons are presented not as neutral assets but as deeply political and ethical commitments, demanding active stewardship grounded in solidarity, sustainability and peace. This values-based orientation links directly to Freire's vision of education as a dialogic and political act of world-making (Freire 1970). Similarly, Veugelers and Bosio (2023) underscore the inseparability of moral and political dimensions in GCE, calling for pedagogical models that cultivate ethical discernment, democratic participation and transformative agency.

## Defining core concepts

### Critical pedagogical foundations in GCE

Drawing on Freire's *Pedagogy of the Oppressed* (Freire 1970), critical pedagogy provides the foundational understanding of education as a practice of freedom rather than domination. His concept of critical consciousness (*conscientização*) becomes particularly relevant in AI-mediated learning environments, where the risk of reducing learners to passive consumers of algorithmic outputs threatens the dialogical nature of transformative education.

Giroux and Bosio (2021) conceptualise GCE as a critical pedagogical practice that must connect theory and practice, reflection and action. They argue that GCE should equip students to challenge entrenched beliefs and narratives that uphold archaic and disempowering social structures permeating all areas of society. This critical orientation is essential for maintaining human agency in AI-enhanced learning environments, where technology must serve to amplify rather than replace critical dialogue and student empowerment.

This critical pedagogical tradition directly informs how we understand GCE as an approach that develops learners' awareness of global interdependence and responsibility, equipping them to engage critically, ethically and actively with global challenges such as inequality, climate change and human rights violations. However, the term encompasses a wide spectrum of interpretations, shaped by diverse political, ideological and pedagogical traditions (Marshall 2011; Veugelers 2011). The United Nations Educational, Scientific and Cultural Organization (UNESCO 2015) promotes GCE as fostering peace, sustainability and human rights, yet scholars caution that such definitions risk reproducing universalist assumptions that obscure local contexts and power asymmetries (Pashby et al. 2021; Yemini 2023).

The conceptual evolution of GCE reflects tensions between instrumentalist models aligned with neoliberal rationalities and transformative models grounded in social justice and critical pedagogy (Giroux and Bosio 2021; Bosio and Schattle 2023). The instrumentalist strand often emphasises employability and global competencies, reducing GCE to a form of soft power or international branding (Aktas et al. 2017; Marginson 2023b). In contrast, critical approaches challenge these framings by foregrounding structural inequalities and advocating for pedagogies of resistance and collective responsibility (Andreotti 2011; Balarin 2011; McLaren and Bosio 2022).

Emiliano Bosio (2023c), Leonor Gaitán-Aguilar et al. (2023) and Valerie Clifford and Catherine Montgomery (2014) emphasise the need for pluralistic and intersectional perspectives that recognise diverse experiences and knowledge systems, particularly from the Global South. Emiliano Bosio and Yusef Waghid (2023) and Bosio (2024), in particular, advance the idea of GCE as a living ethical philosophy rooted in dialogue, relational accountability and the development of values such as humility, compassion and courage – offering an alternative to technocratic and market-driven interpretations. This includes an awareness of how GCE is shaped by colonial legacies, economic hierarchies and language ideologies (Parmenter 2011; Bamberger and Morris 2024), as well as calls to avoid “one-size-fits-all” models that overlook local realities.

Rather than offering a prescriptive definition of GCE, we see it as a site of ideological struggle and ethical negotiation – a perspective necessary for navigating its implementation in the datafied, AI-driven realities of HE (Bosio and Olssen 2023; Helm et al. 2024; Katsamakos et al. 2024). Our framework aligns with what Andreotti (2011) terms “critical” GCE, as opposed to “soft” forms that emphasise helping others through universalist values or charitable engagement. This distinction informs our emphasis on knowledge democracy, decolonial awareness and ethical relationships as core dimensions of meaningful global citizenship in the AI era.

### **Neoliberalism in HE as a challenge to critical GCE**

Neoliberalism refers to a dominant ideological and economic framework that privileges individualism, competition, accountability and market efficiency over collective wellbeing, social justice and ethical responsibility. Within educational settings, neoliberalism manifests through the commodification of knowledge, the marketisation of internationalisation and the instrumentalisation of learning outcomes

(Marginson 2023a; Aktas et al. 2017; McLaren and Bosio 2022). These dynamics shape how institutions define success, design and structure curricula, and engage with global issues – often sidelining critical engagement and participatory democratic values.

In the realm of GCE, neoliberal logic reduces global engagement to a set of transferable skills or employability assets, stripping it of its political and ethical depth. Scholars have critiqued this trend for fostering a depoliticised form of GCE that promotes superficial multiculturalism and “global competence” without interrogating the structural inequalities, power asymmetries and postcolonial legacies embedded in global interactions (Bosio and Schattle 2023; Pashby and Andreotti 2016; Bamberger and Morris 2024). Andreotti (2011) and Stein (2015) argue that such forms of GCE risk reinforcing colonial hierarchies by masking privilege as responsibility, offering students the illusion of global benevolence while avoiding the discomfort of confronting complicity in global injustice. From this perspective, GCE aligned with neoliberalism serves institutional branding, contributes to global rankings and functions as a tool of soft power rather than a transformative educational endeavour (Yemini and Sagié 2016; Clifford and Montgomery 2014).

Neoliberalism is more than an economic driver; it is a rationality of governance that redefines the purposes of HE and global engagement through metrics, competitiveness and utility. In the context of GCE, it transforms learning into a project of skills acquisition and global market adaptability, often masking itself as inclusive or transformative while upholding existing hierarchies (Bosio and Schattle 2023; Marginson 2023b). Andreotti warns that within this paradigm even well-intentioned global citizenship work can become “uncritical and wholesale” reproductions of modernity’s colonial logic (Andreotti 2011, p. 382). Neoliberal GCE often adopts charity-based models rooted in assumed superiority, ignoring structural inequalities and their colonial roots. This is compounded by epistemic universalism, where Western knowledge systems are presented as the neutral standard for education and development (Quijano 2000; Maldonado-Torres 2004). The result is a “spaceless, ahistorical subjectivity” (Andreotti 2011, p. 386, with reference to Maldonado-Torres 2004), where learners are encouraged to adopt globally responsible roles without examining their own complicity in global systems of power and exploitation.

Social cartographies have shown that neoliberal logics rarely operate in isolation. Rather, they frequently coexist with liberal and even critical discourses in HE, forming hybrid or ambivalent assemblages that can blunt or co-opt resistance (Andreotti et al. 2016). For example, liberal discourses around inclusion, diversity and academic excellence are often absorbed into neoliberal rationalities – used, for instance, to promote brand value or to legitimise performance metrics. Even critical vocabulary can be appropriated to justify entrepreneurial or internationalisation strategies, where references to “empowerment” or “justice” mask underlying agendas of competitiveness and market expansion (Andreotti et al. 2016, pp. 91–93). Andreotti calls for “walking ... the edge of ... theory” (Andreotti 2011, p. 381) as an ethical responsibility: educators must recognise the limitations of any single framework – including their own – and remain accountable to the partiality of their perspective.

## Decolonial epistemologies: the pursuit of epistemic justice

Decolonial theory provides the epistemological foundation for understanding how dominant GCE models reproduce colonial relations of power and knowledge. These perspectives serve as transformative lenses that question dominant assumptions about knowledge, identity and educational purpose. These approaches do not aim to offer alternative content alone; rather, they reorient the conditions under which knowledge is produced, legitimised and disseminated. They interrogate the logics of modernity and progress that often underpin GCE – even in its seemingly benign or liberal forms – by asking whose stories, epistemologies and futures are centred and whose are erased (Andreotti 2011; Mignolo 2000; Maldonado-Torres 2004).

Andreotti (2011) advises educators to resist the urge to “fix” or “save” others; instead, they should foster critical self-implication, historical consciousness and awareness of complicity within global systems of inequality. She also argues that GCE must grapple with coloniality of power, a term coined by Anibal Quijano to describe the enduring global hierarchies of race, labour and knowledge rooted in European colonialism. Quijano contends that the modern world system is built on a racialised hierarchy that justified colonial domination, with “race” functioning as a tool for labour exploitation and epistemic control. Eurocentrism, he argues, reinforces these structures by universalising Western knowledge and marginalising non-Western perspectives (Quijano 2000).

Building on this, Nelson Maldonado-Torres (2004) critiques the presumed neutrality of Western knowledge and identifies what he terms *epistemic racism* – the structural denial of non-European intellectual traditions as fully human, rational or modern. He introduces the concept of *coloniality of being*, revealing how global citizenship discourses often neglect the spatial and historical violence inscribed in modernity’s self-image. These critiques point to the need for GCE to go beyond inclusion and diversity to address the geopolitical economy of knowledge production.

Boaventura de Sousa Santos (2007) complements this by offering the metaphor of *abyssal thinking* – the process by which Western epistemologies render other knowledge systems non-existent or inferior. To counter this, Santos proposes an ecology of knowledges and post-abyssal thinking: approaches that invite educators to move beyond totalising universals and to make room for coexisting, incommensurable epistemologies. These perspectives align with Walter Mignolo’s (2000) call for *border thinking* – a double critique that both engages with and steps outside the frameworks of Western modernity. In his later work, Santos (2018) builds on this critique by introducing the concept of *epistemic extractivism* – the appropriation of ideas from marginalised contexts by dominant knowledge systems, often stripped of their ontological grounding and rearticulated through Western logics. Just as natural resources were extracted under colonial regimes, knowledge is now mined from the Global South without acknowledging its origin or the epistemologies that sustain it. By contrast, *epistemic pluralism* – central to Santos’s vision of an *ecology of knowledges* – urges educators and institutions to create learning spaces where diverse ways of knowing are treated as co-legitimate and irreducible to technocratic

or universalist frameworks. This shift is foundational to any GCE framework that aims to foster epistemic justice in AI-mediated educational environments.

These decolonial orientations reframe the goal of GCE not as transmitting universal values but as cultivating ethical uncertainty, relational accountability and epistemic disobedience. They challenge educators and learners to confront their own attachments to stability, superiority and coherence, and to sit with discomfort rather than resolve it. Importantly, Andreotti (2011) calls for a pedagogy of dissensus – one that does not foreclose contradiction or complexity but sees these as necessary conditions for learning across differences. These epistemological orientations call for new tools and dispositions in educational research and practice – ones that can hold contradictions, avoid foreclosure and refuse premature consensus.

### Equity and inclusion

Equity and inclusion are frequently invoked as normative pillars in educational discourse, yet their interpretation varies significantly depending on the underlying epistemological and ideological frameworks. In many HE contexts, inclusion is framed through a liberal lens as the expansion of access and opportunity – often quantified through metrics such as enrolment rates or diversity quotas. While such measures signal institutional commitment, they risk being reduced to instrumental mechanisms that preserve dominant structures rather than transform them (Andreotti et al. 2016). Critical and decolonial perspectives shift the focus from mere representation to epistemic and relational justice. They ask: Who is being included, on whose terms and at what cost? As Andreotti (2011) cautions, inclusion that is grounded in Western universalism often functions as a civilising gesture, one that invites “the Other” into existing systems without questioning the exclusions those systems rely on. Stein (2015) shows how cosmopolitan models perpetuate hierarchies that privilege certain forms of knowledge and experience.

In the AI era, these exclusions risk becoming further entrenched as algorithmic systems amplify historical biases in their design and training data. Maldonado-Torres (2004) adds that true inclusion cannot occur without confronting epistemic racism – that is, the denial of certain groups’ capacity to produce legitimate knowledge. This structural devaluation is a form of coloniality of being, where racialised and marginalised populations are materially excluded and ontologically subordinated. From this perspective, efforts towards inclusion must be accompanied by a dislocation of epistemic privilege and a willingness to reimagine who counts as a knower and what counts as knowledge.

Critical and decolonial perspectives reveal how educational systems systematically marginalise students whose lived experiences, ways of knowing or cultural realities fall outside dominant frameworks. In the AI era, these exclusions increase through patterns of epistemic marginalisation. In line with this, Santos (2007) proposes a shift from inclusion as assimilation to an ecology of knowledges – a framework that affirms epistemological plurality and the interdependence of different ways of knowing and being. This requires abandoning the idea of a general, all-encompassing epistemology and embracing incompleteness and interdependence.

Inclusion, then, is not about fitting diverse bodies into existing moulds, but about reworking the moulds themselves.

In this spirit, our framework treats equity and inclusion not as technocratic goals, but as ongoing, contested processes. It foregrounds the lived experiences and structural positioning of those who are most often excluded – not to integrate them into the existing architecture, but to reimagine the architecture itself. It insists that inclusion must go beyond access to address belonging, dignity, shared authorship and epistemic justice. To move towards this horizon, HE institutions must cultivate pedagogies and policies that support discomfort, dissent and dialogue, rather than defaulting to celebration, harmony or tokenism. In this view, equity becomes not just a matter of redistribution, but of recognition, redress and reconstitution.

### Human-centredness as ontological commitment

Human-centredness represents an ontological commitment to preserving what Bosio and Schattle (2023) describe as authentic human relationships in educational spaces increasingly shaped by AI. It reflects a philosophical stance on the nature of human existence that centres relationality, ethical co-presence and the cultivation of collective wisdom. It emphasises that education is not merely a technical process, but a deeply human endeavour grounded in emotional, cognitive and moral engagement. This is not a romanticised humanism but a strategic resistance to what we call *algorithmic reductionism* – the notion that human learning, behaviour and decision-making can be fully captured and controlled through data and algorithms. Such a view reduces education to quantifiable outputs, overlooking the emotional, relational and contextual dimensions that are essential to meaningful and transformative learning. Human-centredness provides a counterpoint to both technocentric and neoliberal logics that prioritise efficiency, metrics and automation over the complex, relational and transformative dimensions of education (Bosio and Schattle 2023; Gardner-McTaggart and Palmer 2018).

As technological innovations – especially GenAI – reshape the conditions of teaching and learning, there is a growing need to centre relational ethics and emotional intelligence in educational design (Helm et al. 2024; Katsamakos et al. 2024). The toolkit prepared by the UNESCO Institute for Information Technologies in Education and Shanghai Open University (UNESCO IITE and SOU 2023) recognises this need by framing global digital citizenship not just in terms of technical skills but also through digital wellness, identity formation and human relationships. Bosio and Waghid (2023) further argue that ethical education in a digital context must foster dialogue and shared purpose as foundations for transformation. Building on this, Bosio (2024) presents a values-creation model rooted in empathy, solidarity and ethical imagination – concepts that are essential for rehumanising global learning in AI-mediated environments. We argue that, within GCE, human-centredness must be treated as an ethical imperative – foregrounding agency, dignity and intersubjectivity as safeguards against the depersonalising effects of AI-driven platforms.

Central to this reorientation is Carlos Torres's concept of *el buen vivir* [the good life]– grounded in Indigenous Latin American epistemologies – which provides a compelling alternative to Western-centric GCE models. Torres describes

this concept as inherently complex, representing a fundamentally different understanding of how individual and collective wellbeing intersect (Bosio and Torres 2019). Unlike neoliberal approaches that emphasise individual competencies or liberal models focused on cultural awareness, *el buen vivir* situates global citizenship within relational ecologies that are community-driven, ecologically balanced and culturally responsive. This vision aligns with our framework's human-centred and environmental dimensions, offering crucial guidance for integrating technology in ways that enhance rather than diminish our capacity for ethical relationships and ecological awareness. It also aligns with Viv Caruana's (2014) vision of resilience as both a cognitive and emotional capability essential for navigating complex global realities. While not framed explicitly within GCE, the emphasis of the present article's first author, Marianthi Karatsiori, on resilience and ethical responsibility towards the Other aligns with our commitment to a human-centred vision of education and informs our interpretation of these values within GCE contexts (Karatsiori 2023).

Thus, we ask: How are meaningful interpersonal bonds being nurtured? How is collective wellbeing prioritised? And how does AI integration support – rather than replace – dialogue, empathy and shared learning? This commitment to human-centredness is not anti-technology but rather post-technocratic: it recognises that digital tools must serve, not define, educational relationships, providing a normative anchor for navigating technological transformation while preserving the heart of education – what makes us human.

### AI and the datafied society: new challenges for GCE

Schäfer and van Es (2017) argue that the datafied society reveals how culture, governance and identity are increasingly shaped by data infrastructures. In educational contexts, this creates what we term *techno-pedagogical tensions* – conflicts between the efficiency-oriented logic of AI systems and the relational, contextual and ethical dimensions of transformative learning. The integration of AI in GCE thus requires what Rosi Braidotti (2021) defines as *posthuman feminism*, which is a creative response to contemporary conditions and a call to action and dialogue to confront injustices of sexism, racism, ecocide (widespread destruction of natural ecosystems) and neoliberal capitalism. This approach recognises digital tools as sociotechnical systems embedded with values, assumptions and biases rather than neutral instruments of efficiency. This aligns with Bosio's (2024) argument that technology must amplify rather than replace human agency, dialogical engagement and shared purpose in educational contexts.

While AI promises enhanced personalisation, automation and scalability, its incorporation into GCE introduces profound ethical, epistemic and pedagogical dilemmas. These concerns are echoed in the OECD analysis (Varsik and Vosberg 2024), which warns that AI adoption in education often prioritises efficiency over equity, exacerbating socioeconomic inequalities unless governed by inclusive, ethical frameworks. It explains that current disparities in digital infrastructure and training deepen educational inequalities, with students in disadvantaged regions disproportionately affected by lack of access and algorithmic bias. Katsamakas et al.

(2024) further emphasise how institutional systems shaped by AI often follow feedback loops that amplify pre-existing hierarchies and diminish opportunities for critical reflection.

This raises critical questions for GCE: Who benefits from AI in education? What kinds of knowledge are prioritised, excluded or automated? Francesca Helm et al. (2024) and Alexander Gardner-McTaggart and Nicholas Palmer (2018) highlight the tension between technological efficiency and the complexity of human interaction, warning against reducing learning to data exchanges or dashboard metrics. While AI may support translation, recommendation or assessment, it cannot replicate contextual nuance, intercultural negotiation or moral deliberation – core competencies in GCE. Scholarship of educational technology increasingly calls for digital ethics frameworks that foreground autonomy, justice and inclusion (UNESCO IITE and SOU 2023). This involves resisting techno-determinism and interrogating the narratives that accompany AI adoption – particularly those that frame it as inevitable, universally beneficial or politically neutral (Bosio and Olssen 2023). In GCE, such narratives risk crowding out attention to power, history and relationality, reinforcing the depoliticised, ahistorical tendencies that Andreotti et al. (2015) identify through the HEADS UP heuristic as characteristic of uncritical global citizenship discourse.

At the same time, technology does offer transformative possibilities when used deliberately to support collaborative learning, multilingual dialogue, open knowledge sharing and accessible pedagogical design (Lambert and Czerniewicz 2020; Cronin 2017). Integrating AI in GCE therefore requires more than technological implementation. It also demands a normative stance that evaluates how digital tools shape worldviews, interpersonal dynamics and educational goals. This article positions technological integration as both an opportunity and a provocation: it invites institutions to rethink not just what tools are used, but *why, how* and *for whom*.

### Social cartography as methodological approach

One of the key tools that helps visualise and navigate the plural and often contradictory positions within GCE is social cartography, as developed by Andreotti et al. (2016). Unlike conventional mapping approaches that seek to fix or reconcile tensions, social cartographies function as *performative pedagogical devices*. They allow educators and researchers to hold multiple, incompatible discourses in productive tension – without prematurely resolving or collapsing them into a singular normative framework. In the context of HE, where global imaginaries, neoliberal logics and justice-oriented critiques often coexist uneasily, social cartography enables a reflexive engagement with these discourses and the ethical contradictions they produce. Rather than defining what GCE *should* be, this approach invites actors to locate themselves within contested discursive fields – such as liberal, neoliberal and critical/decolonial orientations – and to critically examine the attachments, assumptions and institutional imaginaries that shape their views.

This aligns with Andreotti's earlier call to "wal[k] ... the edge of ... theory" (Andreotti 2011, p. 381) and maintain epistemic humility in the face of complexity and colonial entanglement. To further articulate the risks embedded in well-intentioned yet depoliticised approaches to GCE, we draw on Andreotti et al.'s (2015)

HEADS UP heuristic, which identifies seven problematic tendencies that often shape global education discourses: hegemony, ethnocentrism, ahistoricism, depoliticisation, salvationism, uncomplicated solutions and paternalism. These tendencies can reinforce colonial logics and neoliberal narratives, even in frameworks that claim to promote global justice or digital equity. By acknowledging and resisting these patterns, our framework seeks to foster epistemic plurality, relational accountability and greater critical reflexivity in how GCE is conceptualised and enacted – particularly in AI-mediated educational spaces.

### Framework as cartographic intervention

Our framework can be understood as a cartographic reflection tool – a performative heuristic that maps, rather than dictates, the diverse ethical-political commitments, technological dilemmas and pedagogical imperatives confronting institutions today. This approach reinforces our critique of universalist framings of GCE and AI ethics, emphasising instead a relational methodology grounded in critical reflexivity, discomfort and the refusal of premature consensus. By positioning our framework as a cartographic intervention, we underscore its function as a dynamic, evolving guide – one that helps institutions navigate their own positionalities, contradictions and hopes within the broader terrain of GCE in the AI era.

The conceptual framework presented here (Table 1) builds on four key contributions developed earlier in the article: techno-pedagogical tensions, which describe the friction between AI's efficiency-driven logic and the relational imperatives of GCE; post-technocratic thinking, which interrogates the sociotechnical imaginaries underpinning AI; social cartography, which informs the framework's non-universalist, dialogical stance; and human-centredness, which anchors educational practices in relational ethics and intersubjectivity. These commitments shape the framework as a critical-decolonial, reflexive response to emerging challenges in AI-mediated global education.

This cartographic approach serves three key functions:

- (1) diagnostic mapping of existing tensions and contradictions within institutional practices;
- (2) reflexive examination of epistemological and ethical commitments; and
- (3) transformative opening of alternative possibilities for reimagining GCE in human-centred ways.

Table 1 synthesises key conceptual contributions from four cornerstone works that underpin this article's critical-decolonial orientation to GCE in the AI era: Andreotti's (2011) distinction between soft and critical GCE; Andreotti et al.'s (2016) development of social cartographies as a performative, non-universalist mapping tool; Stein and Andreotti's (2016) articulation of the modern/colonial global imaginary in HE; and Bamberger and Morris's (2024) critique of postcolonial GCE approaches. While the first three works provide ethical, epistemological and methodological grounding for the reflexive, justice-oriented framework proposed here,

Bamberger and Morris offer a necessary counterpoint, challenging the field's tendency towards Occidental bias (centring the West) and urging scholars to account for multipolar geopolitics, local agency and non-Western forms of domination. Including their contribution ensures that the framework remains dialogic and attentive to internal debates within the GCE literature.

## **Narratives of internationalisation in GCE**

Narratives of internationalisation in HE are increasingly being scrutinised for their alignment with modern/colonial imaginaries and neoliberal global frameworks. While traditionally framed as the expansion of global opportunities and cultural awareness, internationalisation often operates within a logic of Western universalism, academic capitalism and institutional branding (Andreotti et al. 2016). This section draws on critical, decolonial and human-centred perspectives to map a more nuanced, context-sensitive and inclusive understanding of internationalisation in GCE.

We structure the discussion through three interrelated lenses: plural narratives; plural and reflexive pedagogies; and digital, local and ecological integration.

### **From institutional logics to plural narratives**

Critical scholarship argues that internationalisation is not ideologically neutral. Tight (2022) documents how traditional, Western-driven models are being redefined in non-Western contexts as institutions resist epistemic assimilation and reclaim their cultural agency. Yet, as Pashby (2011) and Pashby and Andreotti (2016) argue, such shifts often occur within the constraints of market-driven logic, where global citizenship is framed as a skillset for economic competition rather than as an ethical, relational practice. Using social cartography, they illustrate how liberal, neoliberal and critical discourses intersect in practice, generating contradictions between institutional aspirations and actual outcomes.

Nancy Bradt (2023) and Tariq Islam (2019) state the lived realities of students navigating multiple cultural, national and migration-based identities. These narratives challenge simplified ideas of the “global learner” and demand frameworks that centre identity, belonging and power. Andrea Dyrness (2021) echoes this by calling for pedagogies that validate transnational youth experiences through inclusive and relational approaches. These perspectives align with Andreotti's (2011) decolonial critique: rather than adding marginalised voices to existing frames, institutions must reconfigure how knowledge, legitimacy and identity are structured. In response to these tensions, Bosio and Waghid (2023) argue for a reconceptualisation of internationalisation that draws on Global South philosophies and dialogical ethics. They contend that education must move away from Western-centric frameworks and cultivate a praxis rooted in co-agency, shared humanity and lived relationality. This requires a deep commitment to epistemic plurality – recognising diverse

**Table 1** Foundational concepts underpinning the CER framework

Key concept	Reference	Brief description	Link to framework
Soft versus critical GCE	Andreotti (2011)	Contrasts apolitical, empathy-driven (soft) GCE with structurally aware, reflexive (critical) GCE.	Justifies focus on critical/decolonial GCE dimensions (e.g., ethical relationships, structural analysis).
Social cartographies	Andreotti et al. (2016)	Maps plural, often conflicting epistemologies without seeking closure or final truth.	Framework is a situated cartographic tool – not prescriptive, but reflective.
Discursive orientations	Stein & Andreotti (2016)	Identifies overlapping liberal, neoliberal and critical discourses in GCE/HE.	Frames how GCE discourse is shaped by institutional and ideological forces.
Ethical relationality	Andreotti et al. (2016)	Foregrounds relational accountability in asymmetrical and uncertain contexts.	Supports design of relationally accountable AI-mediated education.
Epistemic humility	Andreotti (2011)	Acknowledges the limits of one's worldview; emphasises openness to other epistemologies.	Guides inclusive AI design and pedagogies that are open to other knowledge systems.
Complicity awareness	Andreotti (2011)	Recognises the educator's embeddedness in global systems of dominance.	Encourages critical reflection on one's institutional and epistemic positioning.
Performative mapping	Andreotti et al. (2016)	Uses mapping to explore tensions, provoke reflection and disrupt universalist claims.	Shapes framework role as a reflective, dialogical tool rather than a checklist.
Multiplicity and tension	Andreotti et al. (2016)	Accepts coexisting, incommensurable perspectives as legitimate and generative.	Encourages inclusion of tension and conflict within institutional self-assessment.
Anti-colonial commitments	Andreotti (2011)	Centres educational aims to dismantle colonial legacies and epistemic dominance.	Foundational for ethical–political principles underlying the ten-dimension matrix.
Coloniality of power	Quijano (2000; in Andreotti 2011)	Global systems of power rooted in race, labour and knowledge domination.	Helps diagnose structural dominance in education and technology systems.
Abyssal thinking	Santos (2007; as cited in Andreotti 2011)	Modern Western thinking constructs invisible divides that render other realities non-existent.	Warns against binary thinking in tech-driven and Western epistemologies.
Ecology of knowledges	Santos (2007; as cited in Andreotti 2011)	Calls for epistemological pluralism and mutual recognition of diverse ways of knowing.	Informs framework's call for epistemic plurality and ethical dialogue.

**Table 1** (continued)

Key concept	Reference	Brief description	Link to framework
Epistemic racism	Maldonado-Torres (2004; in Andreotti 2011)	Systemic denial of non-European epistemic capacities under colonial modernity.	Illuminates how AI and HE may reinforce erasures of subaltern epistemologies.
Border thinking	Mignolo (2000; in Andreotti 2011)	Knowledge from the margins critiques the centre; emerges from colonial differences.	Supports epistemic justice and situated knowledges in digital GCE.
Diversity	Andreotti (2011)	Proposes a pluralist alternative to Eurocentric universality, grounded in difference.	Articulates pluriversal GCE that resists homogenisation and affirms diversity.
Plural criticality	Bamberger & Morris (2024)	Argues for a multipolar, geopolitically grounded critique that resists binary West/non-West framings.	Informs a reflexive balance between decolonial critique and recognition of contemporary power pluralities.

*Note:* GCE = global citizenship education; HE = higher education; AI = artificial intelligence.

conceptions of knowledge, justice and global solidarity as legitimate foundations for international education.

This imperative is echoed in the work of Bosio et al. (2023), who introduce a range of perspectives from GCE scholars across the Global North and South, highlighting the need to de-centre dominant imaginaries in favour of more inclusive, relational and ethical orientations. This approach promotes a values-based vision grounded in what Bosio and Torres (2019) conceptualise as the “3Ps” – peace, people and planet – which serve as ethical anchors for GCE in times of social and ecological crisis. Rather than advocating for a universal model, they foreground how GCE must remain contextually embedded, shaped by distinct historical, cultural and geopolitical realities.

Moreover, Kevin Kester (2023) and Lisa Unangst and Edward Choi (2018) highlight the need to embed GCE into institutional cultures, not as an optional add-on, but as a core ethical commitment to collective transformation. Importantly, Yemini (2023) warns against treating GCE as a fixed truth or moral panacea, instead urging researchers and institutions to critically engage with the assumptions that underlie dominant narratives. Her critique of “sacred truths” in GCE – including unexamined links between mobility, competence and citizenship – resonates with Bosio and Torres’s (2019) call for GCE to be built on mutuality and reciprocity, not soft universalism. This is particularly important as digital access – not physical travel – now shapes who can participate in GCE, thus requiring a redefinition of mobility and opportunity.

### Plural and reflexive pedagogies

At the curricular level, GCE must move beyond content delivery or generic intercultural activities towards pedagogical frameworks that support deep epistemic reflexivity, ethical engagement and sustained criticality. Gerardo Blanco (2021) introduces the notion of “dwelling” in GCE, which shifts the emphasis from acquiring knowledge about others to inhabiting the ethical tensions that arise in learning across differences. Similarly, Veugelers (2011) proposes that effective GCE must integrate both personal transformation and collective responsibility, calling for pedagogical designs that cultivate learners’ moral, social and political awareness. To address the complex realities of culturally diverse and politically contested classrooms, scholars such as Gardner-McTaggart and Palmer (2018) and Paramitha Eka Putri et al. (2023) promote fluid pedagogies – drawing on kaleidoscopic and mandala-based frameworks – that are sensitive to shifting positionalities and ecologies of learning. These metaphors help reimagine education not as a linear path towards global competence but as an evolving, relational process that values complexity, interconnectivity and uncertainty.

This orientation aligns closely with Bosio’s (2023a) model of GCE as a reflexive dialogic pedagogy. Drawing on Freirean principles, Bosio articulates a tri-dimensional framework based on reflexive dialogue, praxis and critical consciousness, all of which are foundational to transformative learning. Developed through classroom research in a liberal arts undergraduate course in Japan, this framework shows how

ethically grounded, dialogical approaches to GCE can be effectively implemented beyond Euro-American contexts. Reflexive dialogue, in particular, enables students to examine their own assumptions while engaging with “Otherness” in a spirit of humility and ethical responsiveness. As Bosio emphasises, this process fosters a deeper appreciation of “interlocking ‘structural forces of power’” (Bosio 2023a, p. 180, with reference to Freire) that shape lived experiences, creating space for the cultivation of shared values such as justice, solidarity and compassion.

Such pedagogies refuse to divorce learning from its political and affective dimensions and instead embed knowledge production within broader struggles for emancipation and human dignity. Assessment strategies must reflect these principles. Reflective tools such as portfolios, narrative self-reports and community engagement projects (Sperandio et al. 2010; Lazić 2024) not only validate diverse learning processes but also reinforce the values of human-centred and equity-oriented pedagogy. These approaches cultivate not only knowledge but also agency, empathy and a sense of ethical responsibility – capacities that are indispensable for global citizenship in the AI era.

### **Human-centred global citizenship in practice**

In response to critiques of instrumentalism and moral universalism, this section offers an integrated vision of GCE grounded in human-centred, critical and decolonial pedagogies. Drawing on Andreotti’s (2011, 2016) work on epistemic disobedience, Stein’s (2015) critique of the modern/colonial global imaginary, and the social cartography framework developed by Andreotti et al. (2016), we map out practices that resist epistemic closure and technocratic simplification. Instead, these practices foster ethical pluralism, relational accountability and transformative action.

### **Digital and technological integration**

Digital spaces increasingly mediate how learners engage across borders, yet their ethical use remains contested. Intercultural virtual exchanges have been shown to foster global citizenship by enabling students to develop intercultural competencies and deepen their engagement with global issues (Lenkaitis and Loranc 2022). Elisabet Langmann (2011) highlights how such platforms also shape experiences of belonging and hospitality, mediated through representational and territorial logics that influence learners’ sense of self and other.

While digital platforms can democratise access (Helm et al. 2024), critics warn of depersonalisation, datafication and techno-solutionism – risks that may reduce education to algorithmic efficiency or global metrics (Gardner-McTaggart and Palmer 2018). In response, Katsamakos et al. (2024) and Bosio (2023b) call for platforms that prioritise empathetic identification, critical agency, self-confidence and inclusive mindsets. These arguments echo Henry Giroux’s insistence (Giroux and Bosio 2021) that educational technology must not merely deliver content but also cultivate democratic life, ethical reasoning and civic imagination. This view is further reinforced by Bosio (2024), who stresses that in AI-mediated learning environments,

technology must amplify – not replace – human agency, dialogical engagement and shared purpose. Human-centred digital integration must be grounded in value creation, collective care and reciprocal learning, supporting a digital citizenship that is relational, context-sensitive and ethically situated.

### Open educational practices and knowledge democracy

Open educational practices (OEPs) represent another frontier for democratising knowledge. Sarah Lambert and Laura Czerniewicz (2020) and Chrissi Nerantzi (2018) argue how OEPs support collaborative, participatory learning and enable learners to become knowledge co-creators rather than passive consumers. However, this potential can be undermined by epistemic extractivism – the uncritical appropriation of local knowledge by Global North platforms and institutions. Without critical attention, open education risks reinforcing Global North dominance and marginalising local knowledges (Lane 2009). The integration of open data for civic education provides a powerful tool for fostering critical and participatory citizenship. Students can engage directly with public datasets, developing skills to analyse evidence, assess policy decisions and question power structures (Johnson 2014; Atenas et al. 2015; Reggi and Dawes 2016; Atenas and Havemann 2019). These practices reflect knowledge democracy and directly support the epistemic justice and anti-paternalist commitments embedded in Andreotti’s HEADS UP heuristic by actively confronting paternalism, ahistoricism and ethnocentrism in curriculum design.

### Experiential, local–global and environmental integration

Critical GCE must also be embodied and situated – lived in place, grounded in relationships and sensitive to context. Educational mobility programmes such as study abroad and international volunteering have long been valorised as global learning tools (Stoner et al. 2014), but their transformative potential depends on careful scaffolding. Gonçalves Dias et al. (2021) argue for reflection and intercultural training to avoid perpetuating stereotypes or colonial mindsets. At the environmental level, Martin Haigh (2016), Emiliano Bosio and Gustavo Gregorutti (2023), and Dominika Dzwonkowska (2022) insist that GCE must take seriously the ecological crises of our time. Haigh’s use of tree planting as a metaphor for global interconnection exemplifies how local, embodied action can foster planetary awareness and interdependence. The Talloires Declaration (ULSF 1990), as discussed by Bosio and Gregorutti (2023), outlines a ten-point institutional strategy to embed sustainability across teaching, policy and stakeholder partnerships. These initiatives align with both wild pedagogies and post-abyssal thinking, calling for relational modes of knowing and being that resist abstraction, control and domination (Andreotti 2016).

### Complex implementation in plural systems

Building on her earlier critique of institutional logics, Yemini (2023) cautions against uncritical acceptance of “sacred truths” in GCE – particularly those tied to mobility, global competence and developmentalism. She advocates instead for

contextually grounded, ethically reflexive practices that resist normative assumptions, and locally grounded and globally reflexive GCE that accounts for material inequalities and digitally mediated forms of power. A similar concern is raised by Bamberger and Morris (2024), who argue that GCE is often positioned as an inherently virtuous goal, yet such framings can obscure the normative, political and institutional logics they enact. They caution against approaches that treat GCE as a moral end in itself, rather than a site of contestation shaped by competing interests, geopolitical asymmetries and knowledge hierarchies. Their critique further highlights the need to resist narratives that homogenise either the West or the Global South, and to remain attentive to multiple sources of domination – including those emerging from authoritarian regimes. Such a perspective reinforces the importance of pedagogical and institutional practices that are context-sensitive, geopolitically plural and openly reflexive about their own assumptions.

### **From implementation to reflection: reframing GCE for the AI era**

As HE becomes increasingly entangled with the logics of AI, performance metrics and global competitiveness, the future of GCE depends not only on how it is implemented but on the values it enacts and the imaginaries it sustains. While pedagogical models such as transformative learning, open education, intercultural exchanges and sustainability education have enriched GCE discourse (Fanghanel and Cousin 2012; Sperandio et al. 2010; Lambert and Czerniewicz 2020), many of these approaches remain situated within liberal or neoliberal paradigms. They often promote competencies, employability or internationalisation, thus risking detachment from the structural, ethical and epistemological questions that lie at the heart of global education.

We contend that what is urgently needed is not just diverse tools or techniques, but fundamental reorientation – from fragmentation to integration, from delivery to reflection and from instrumentalism to transformation. GCE in the AI era must ask deeper questions: Whose futures are being shaped? Whose knowledge is legitimised? And how can HE meaningfully support relational ethics, epistemic plurality and human flourishing in a datafied world? The framework proposed here is not offered as a technical implementation guide but as a reflective and dialogic intervention. It invites institutions to examine how their practices, policies and pedagogies either reproduce dominant imaginaries or create the conditions for ethical transformation.

At the heart of this framework is the concept of ethical relationality, which foregrounds accountability in relationships marked by asymmetry, uncertainty and difference. Rather than seeking resolution through assimilation or compliance, ethical relationality insists on dwelling with tension, navigating power and remaining accountable to the partiality of all knowledge claims. In the context of AI, this means resisting solutionism and reasserting the value of dialogue, humility and human co-presence in digital spaces, where compassion, courage and shared responsibility guide institutional cultures. Rather than seeing AI as a neutral driver of efficiency, educators should frame technological integration around purposeful

collaboration, critical reflection and collective wellbeing. Similarly, Emiliano Bosio and Hans de Wit (2024) emphasise that preserving human connection is not a nostalgic gesture but a strategic and ethical necessity in an increasingly individualised academic landscape.

This reframing challenges the binary between humanity and technology. The point is not to resist AI *per se*, but to design human-centred systems in which technology supports, rather than substitutes for, ethical learning and institutional transformation. As recent policy frameworks – from UNESCO’s AI toolkit (UNESCO IITE and SOU 2023) to the OECD’s Learning Compass (OECD 2026) – begin to recognise the relational dimensions of digital education, there remains a pressing need to move beyond compliance and towards context-sensitive praxis grounded in justice, humility and care. In response, our framework offers a self-reflective guide for institutions and individuals: not just to ask what they do, but why they do it, who benefits and how practices might be reimagined. It is designed to move away from checklist logic and towards richer engagement with what it means to be a global citizen in an algorithmic world.

## **Building the cartographic, ethical and reflexive (CER) framework for GCE in the AI era**

Our framework’s emphasis is on maintaining human agency and critical consciousness in AI-enhanced learning environments, where technology serves to amplify rather than replace critical dialogue and student empowerment. By integrating traditional GCE principles with contemporary concerns about technological advancement, the framework offers a novel approach to understanding and implementing GCE in HE institutions.

We argue that reflexive dialogue encourages learners to interrogate their positionalities and epistemic assumptions; that praxis links theory to socially engaged action; and that critical consciousness fosters awareness of structural inequalities and moral responsibility. These three dimensions, grounded in values-based pedagogy, form the ethical and pedagogical backbone of the human-centred approach advocated here. This approach helps students to recognise their limitations while contributing to society, and to develop an appreciation of Otherness, which moves beyond surface-level cultural acceptance to a deeper, affective comprehension of others’ perspectives. These orientations provide crucial guidance for maintaining authentic human connection in AI-enhanced learning environments.

Our framework broadens this foundation to respond to the specific challenges and opportunities presented by AI integration in HE. The ten dimensions we propose offer concrete pathways for institutions to centre human connection, ethical responsibility and relational learning while strategically leveraging technological affordances. To protect and strengthen GCE in this increasingly individualised digital landscape, HE institutions must take a proactive, values-driven approach through three key steps. First, they should purposefully design learning experiences that bring students together across differences, countering the tendency towards isolation. The goal should be to leverage technology in service of GCE’s transformative

vision of cross-cultural exchange and a shared sense of global community. As Bosio and Schattle (2023) emphasise, this requires moving beyond philosophical frameworks to encompass substantive action that fully respects the rights of others. Second, institutions must implement GenAI tools in ways that promote interconnectedness, not fragmentation. This means using these technologies to facilitate meaningful interactions, collaboration and development of empathy and intercultural competencies – core aims of GCE. Finally, HE institutions should partner with other organisations and diverse communities to co-create curricula and pedagogies that centre global citizenship, equity and cultural pluralism.

This collaborative, inclusive approach can help ensure that HE remains responsive to local and global realities. By taking these proactive steps, institutions can protect and strengthen GCE as the HE landscape becomes increasingly individualised through technology. In our framework, the evidence categories (shown on the far right of Table 2) encourage institutions to document not just what they do, but also how their practices transform their communities, ensuring that technological integration serves rather than supersedes human connection and collective growth.

Our framework's ten dimensions (shown in the first column of Table 2) are designed not only as internal institutional reflections but also as interfaces with global policy frameworks. While this framework resists prescriptive alignment with any single policy agenda, it encourages institutions to critically reflect on how international tools such as the United Nations SDG Target 4.7 (UNGA 2015, p. 17), the OECD's Learning Compass (OECD 2026), and UNESCO's AI toolkit (UNESCO IITE and SOU 2023) are adapted in their context. Such reflection ensures that global policies are enacted with ethical intentionality, contextual sensitivity and commitment to shared power, rather than through compliance or branding logics. Informed by Bamberger and Morris (2024), who warn that unexamined policy frameworks often mask Western biases, sideline diverse ways of knowing and serve institutional prestige over justice, we propose three reflective questions to support this critical engagement:

- (1) What values underpin the adoption of a given policy framework? Are they aligned with our commitment to relationality, decoloniality and human-centred learning?
- (2) Whose interests and knowledge systems are served or sidelined by the policy's application? How are local voices, needs and forms of knowing integrated or excluded?
- (3) Does the policy serve as a transformative guide or a compliance mechanism? How can we resist instrumentalisation and enact policy through ethical, context-sensitive praxis?

These questions aim to help institutions critically assess their ethical and strategic roles in global education, resisting superficial or compliance-driven approaches.

Table 2 presents the CER framework as a practical institutional self-assessment tool, while Figure 6 visualises the relational architecture underlying it. Figure 6 centres human connection and collective growth and illustrates how the ten

**Table 2** The CER framework: a self-reflection tool for HE institutions

Dimension	Key authors	Institutional reflection questions	Evidence of transformation
<b>1. Decolonial awareness and shared power</b>	Andreotti (2011), Pashby & Andreotti (2016), Balarin (2011), Santos (2018)	<ol style="list-style-type: none"> <li>How are diverse ways of knowing honoured?</li> <li>How are power structures transformed? How are marginalised voices amplified?</li> <li>Are marginalised knowledges used without acknowledging their origins or epistemic grounding?</li> </ol>	<ul style="list-style-type: none"> <li>Stories of knowledge sharing across cultures – Documentation of shared decision-making – Evidence of Indigenous wisdom integration – Narratives of power relationship transformation – Examples of curricula or practices that validate and integrate diverse epistemologies</li> </ul>
<b>2. Digital connection and human agency</b>	Helm et al. (2024), Gardner-McTaggart & Palmer (2018), Holmes et al. (2022), Giroux & Bosio (2021)	<ol style="list-style-type: none"> <li>How do digital/AI tools enhance human bonds?</li> <li>How is human agency preserved in digital spaces?</li> <li>How does AI integration support rather than replace critical dialogue and human intellectual development?</li> </ol>	<ul style="list-style-type: none"> <li>Documentation of meaningful online connections – Stories of technology fostering human bonds – Examples of community-building through digital means – Evidence of human-centred innovation in AI</li> </ul>
<b>3. Intercultural understanding</b>	Dauber & Spencer-Oatey (2023), Goren (2017), Bosio (2023a)	<ol style="list-style-type: none"> <li>How are bridges built across differences?</li> <li>How is shared humanity celebrated?</li> <li>How is appreciation of “Otherness” cultivated beyond surface-level cultural awareness?</li> </ol>	<ul style="list-style-type: none"> <li>Documentation of transformative cultural dialogue – Stories of sustained cross-cultural relationships – Evidence of mutual cultural learning – Examples of stereotype transformation</li> </ul>
<b>4. Institutional vision and values</b>	Bosio & Schattle (2023), Chen (2019), Massaro (2022), Bosio (2023a)	<ol style="list-style-type: none"> <li>How are wisdom, courage and compassion cultivated?</li> <li>How is shared purpose and values developed?</li> <li>How is intellectual humility fostered in cross-cultural dialogue?</li> </ol>	<ul style="list-style-type: none"> <li>Documentation of collective vision development – Stories of values-driven initiatives – Evidence of sustained commitment – Examples of community growth – Documentation of reflexive dialogue outcomes</li> </ul>

Table 2 (continued)

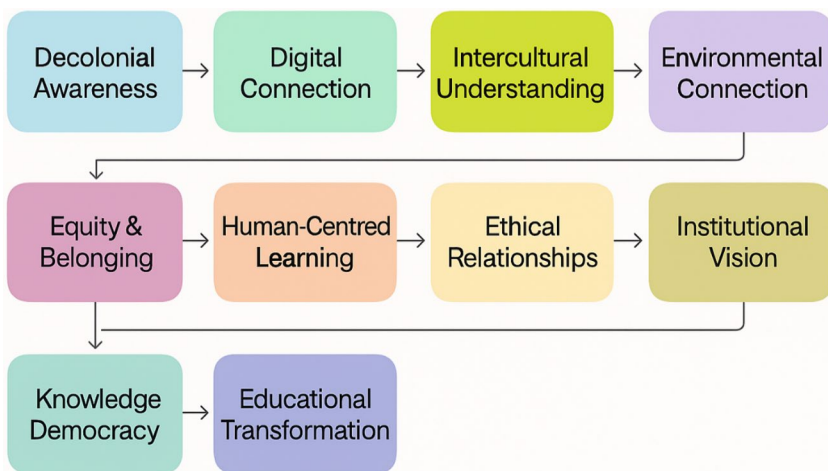
Dimension	Key authors	Institutional reflection questions	Evidence of transformation
<b>5. Ethical relationships</b>	Bosio & Schattle (2023), Yemini (2023)	<ol style="list-style-type: none"> <li>1. How is trust built across boundaries?</li> <li>2. How is mutual benefit ensured?</li> <li>3. How is ethical growth fostered?</li> </ol>	<ul style="list-style-type: none"> <li>– Documentation of trust-building processes – Stories of reciprocal partnerships – Evidence of ethical growth – Examples of shared learning</li> </ul>
<b>6. Human-centred learning</b>	Caruana (2014), Lazić (2024), Karatsiori (2023)	<ol style="list-style-type: none"> <li>1. How are meaningful bonds nurtured?</li> <li>2. How is mutual growth supported?</li> <li>3. How is resilience and responsibility towards others fostered?</li> </ol>	<ul style="list-style-type: none"> <li>– Stories of meaningful learning connections – Documentation of mutual support – Evidence of community care – Examples of collective wellbeing</li> </ul>
<b>7. Equity and belonging</b>	Balarin (2011), Pashby (2011), Bosio (2023a)	<ol style="list-style-type: none"> <li>1. How is inclusivity fostered?</li> <li>2. How is belonging cultivated?</li> <li>3. How is collective strength built?</li> </ol>	<ul style="list-style-type: none"> <li>– Documentation of inclusion practices – Stories of barrier transformation – Evidence of empowerment of the most vulnerable – Examples of belonging cultivation – Examples of transformative dialogue between diverse groups</li> </ul>
<b>8. Environmental connection</b>	Bosio & Gregorutti (2023), Haigh (2016), Dzwonkowska (2022)	<ol style="list-style-type: none"> <li>1. How is environmental connection fostered?</li> <li>2. How is ecological learning facilitated?</li> <li>3. How is environmental wisdom built?</li> </ol>	<ul style="list-style-type: none"> <li>– Stories of environmental initiatives – Documentation of collective eco-action – Evidence of ecological learning/environmental solidarity</li> </ul>
<b>9. Knowledge democracy</b>	Lambert & Czerniewicz (2020), Nerantzi (2018)	<ol style="list-style-type: none"> <li>1. How is knowledge democratised?</li> <li>2. How is collaborative learning facilitated?</li> <li>3. How is collective wisdom built?</li> </ol>	<ul style="list-style-type: none"> <li>– Stories of knowledge exchange – Documentation of collaborative discovery – Evidence of shared learning – Examples of collective wisdom-building</li> </ul>
<b>10. Educational transformation</b>	Bosio & Schattle (2023), Ramstrand et al. (2024), Karatsiori (2023), McLaren & Bosio (2022)	<ol style="list-style-type: none"> <li>1. How are past lessons and future obligations integrated?</li> <li>2. How is mutual inspiration facilitated?</li> <li>3. How is shared purpose maintained?</li> </ol>	<ul style="list-style-type: none"> <li>– Documentation of transformative practices – Evidence of shared purpose – Examples of concepts such as “responsibility towards the other” and “revolutionary love”</li> </ul>

interconnected dimensions inform and build upon one another to support human-centred educational development in HE.

## Conclusions and future directions

In reimagining GCE in the age of AI, we argue for a human-centred, decolonial and ethically grounded conceptual framework. At the heart of this reimagining lies a fundamental principle: authentic GCE cannot be realised without deep commitment to relationality, ethical responsibility and recognition of our shared humanity. The transformative potential of GCE emerges not from replicating best practices or using digital platforms alone, but from embodied and affective experiences of connection across difference. While digital technologies and virtual exchanges can extend access and supplement engagement, they cannot replace the formative human encounters that cultivate empathy, humility and ethical discernment.

However, significant structural inequalities persist. Disparities in access to mobility, intercultural exchange and knowledge production continue to marginalise many students and institutions. Future research must focus on how to democratise opportunities for global engagement, not only by expanding access to physical or digital exchange but by rethinking the terms on which participation occurs. This includes interrogating how GCE frameworks are culturally translated and adapted, particularly in non-Western contexts, and how student agency is fostered within or against institutional imaginaries of global citizenship. Moreover, power asymmetries within global education – especially between institutions in the Global North and South – demand critical reflection and action. GCE can only be meaningful if those from more privileged HE institutions are willing to redistribute resources, share authorship and challenge hierarchies, rather than reinforcing them through symbolic or



**Figure 6** The interconnected dimensions of the CER framework, centred on human connection and collective growth

market-driven engagement. Without such commitment, GCE risks remaining a utopian ideal – one that gestures towards justice while reproducing systemic inequities.

We do not need AI to replace human intellectual and emotional capacities; instead, we must intentionally integrate technology in ways that amplify our ability to relate, care, act and create ethically together. The future of GCE must therefore prioritise the quality of human connection above all – recognising each learner as invaluable and irreducible, distinct from any algorithmic tool, no matter how advanced. Ultimately, we call for a recalibration of GCE around relational ethics, shared responsibility and epistemic humility. Only by centring what makes us human can GCE fulfil its promise – not as a strategy of institutional branding, but as a transformative project of global solidarity. As HE institutions face increasing pressure to integrate AI technologies, they must resist the temptation to pursue efficiency at the expense of ethics. Instead, we recommend they embed this human-centred, critically reflexive GCE framework into their strategic planning, curriculum design and institutional ethos. Researchers, educators and policymakers alike must engage in ongoing dialogue and collaborative experimentation to ensure that digital transformation in education serves as a pathway to justice, not a mechanism of exclusion. The time for reflection is now – but so too is the time for bold, values-driven action.

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