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Higher Education Learning for Sustainability in the Anthropocene; a matter of a transforming self-identity?

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Abstract

Purpose

This article explores a new direction for Higher Education in the Anthropocene era. Higher Education is envisioned as the steward of the safe and just space for the transformation of learner self-identity. Transformative learning for sustainability is seen as the main enabler for more ecological self-identities to emerge and the conditions for its successful implementation are discussed. The transformation strategies of the authors own institutions are analysed using SWOT analysis to identify whether they can support these conditions on self-identity and conclusions and ways forward for policy and practice are drawn.

Approach

The theoretical lens of self-identity and its links with planetary health and wellbeing in the Anthropocene is used to identify the principles of learning for sustainability, the conditions for self-identity transformation and the implications for Higher Education policy and practice through integration in a holistic conceptual framework.

Findings

The holistic conceptual framework produced places Higher Education learning for sustainability as crucial from moving beyond anthropocentrism towards ecocentrism in the Anthropocene. The analysis of the university strategies emphasises how current policies and practices of transformation are inherently contradictory and could cause unintended consequences in terms of prioritising more individualistic self-identities than more ecological ones.

Originality

This article proposes transformation of learner self-identities as the main aim of Higher Education in the Anthropocene because of the crucial link between self-identities and sustainability. It is the first-time self-identity is used as a framework by which reflect on the role of Higher Education in terms of learning for sustainability transformation in the Anthropocene era.

Key words: Higher Education, sustainability, Anthropocene, transformative learning, ecological self-identity, inner development goals, ecocentrism.

Introduction

Unprecedented human-induced environmental change is taking its toll on the planet and people, witnessed by the extreme heatwaves, severe flooding and devastating forest fires that took place in the summer of 2023 (Capua and Rahmstorf, 2023). Many link these extreme phenomena with climate change (Alizadeh *et al.*, 2021; Intergovernmental Panel on Climate Change, 2023) and demand immediate action. The covid-19 pandemic, another crucial sustainability challenge, has been associated with declining health and wellbeing (Feroz *et al.*, 2020) as well as economic loss from reduced activity during lockdown periods (Yamaka *et al.*, 2022). The armed conflicts, civil wars and political instabilities that are raging in many parts of the world have resulted in loss of life, displacement of populations and far-reaching consequences in terms of food and energy security in countries not immediately involved (Benton *et al.*, 2022; Welfens, 2023). All these bear testament to the Anthropocene, the era in which human activity on the planet is utterly destructive, destabilising and disruptive (Schinkel, 2021).

The Anthropocene is a contested term, and it broadly represents “the present time, when human impact on the Earth’s surface, atmosphere, and hydrosphere has been deemed to be global” (Finney and Edwards, 2016). Scholars, from the social and political sciences, see it also as an era of natural and cultural homogenisation (Eriksen, 2021) that is shrinking the diversity of species as well as the diversity of cultures, but also as an era of shifting ideas and philosophies about nature and culture and their meanings and a time for political decisions to avert large scale socio-environmental change (Arizpe Schlosser, 2019). The Anthropocene is largely linked to anthropocentrism, the view that humans are the highest reality, as its driving force but also its solution through the pursuit of human wellbeing. However, the Anthropocene era can help redefine what it is to be human through the lens of geological evolution and the inextricable relationship of humans with nature (Mahaswa and Widhianto, 2020).

Higher Education (HE) plays a crucial role in the construction of social narratives but needs to radically rethink its mission in the Anthropocene and transform itself as it has largely served to perpetuate the dominant economic paradigm of resource depletion, consumerism and human domination over nature integral in western social systems (Carstens, 2016). Authors argue towards placing humans at the heart of HE efforts to change the narrative through appeals to moral responsibility and ethics as well as the entanglement of humans with other non-human species and the abiotic world, necessitated by the precarity of the challenges humanity are faced with (Gildersleeve and Kleinhesselink, 2020). Some take further this ethical imperative to recommend the training of future professionals through HE in the Anthropocene to ensure anticipation of global changes, providing updated knowledge, skills, methodologies and competencies and an ethical background (Martínez-Hernández and Mínguez, 2023). Others take the entanglement aspect and precarity beyond the ecological aspects to include socio-political, cultural, and economic challenges and demand an education that uncovers these relationships through empowering humans with transversal thinking. They suggest humans should have the flexibility, adaptability and mutability required to learn uncomfortable knowledge in awkward settings and make difficult decisions (Carstens, 2016). Some suggest constructivist pedagogies that enable a critical analysis of the current state and human activity on the planet so that the status quo can be challenged and meaningful action taken (Barr *et al.*, 2022). There is further discussion that HE should be non-affirmative to stop perpetuating the societal and

economic mandates and enable learners to experience progress in how they handle their lives in view of the challenges presented by the Anthropocene (Wolff *et al.*, 2024). Crucially, authors argue, HE should be focusing on the public interest and should not be subject to academic capture and reticence but strive for participation and transparency (Lachapelle *et al.*, 2024).

The above voices stress the importance of the role HE can have in society and its unique contribution to achieving sustainability as a public good. Education for Sustainable Development (ESD) emerged as response to this call and to the consideration that environmental problems are largely social, political and economic and is increasingly influencing Higher Education provision (Mokski *et al.*, 2023). Specifically, a recent literature review identified two dominant strands of HE integration; ESD integration into existing disciplinary curricula and new, stand-alone ESD curricula (*ibid*). ESD has also been criticised for adopting an anthropocentric view in which the benefits to human societies are prioritised over the benefits to the Earth (Taylor *et al.*, 2017). There are two types of ESD identified in the literature, ESD 1 and ESD 2. ESD 1 is the more instrumental way that supports that specific knowledge, behaviours and skills can contribute to transformation towards sustainability, and ESD 2 is a critical approach that empowers learners to think, explore the dilemmas, power asymmetries and hidden assumptions and contradictions inherent in sustainability (Vare and Scott, 2007).

Even if these two ESD approaches are combined, they may not be able to avert unsustainability as there is need for more systemic transformation. Learning for sustainability (LfS) in HE, should build on knowledge, skills, participation and empowerment, but also move beyond these to address the self-identities of learners and employ learning approaches that will enable them to align those self-identities with the achievement of planetary health and wellbeing beyond anthropocentrism respecting the multiple entanglements concept. In other words, there is need to investigate how HE institutions will move from intentions to the actual realisation of nurturing sustainability change-makers that will restore the human-nature relationship, which is urgently needed in the Anthropocene.

This article explores the role of HE LfS in the Anthropocene era, its link with learner self-identity and how through its interconnectedness with socio-environmental systems, it can contribute to collaboration, political action, regeneration and systemic and long-lasting social change. It aims to investigate the following research questions.

1. Why is self-identity transformation a crucial consideration for LfS in HE?
2. What are the principles of learning that should be applied to assist the realisation of a just, prosperous, and sustainable future for all and action at all levels?

Further, it attempts compile a conceptual framework for the role of HE in the Anthropocene, the conditions and implications for learner self-identity transformation and use it to analyse two university strategies for transformation in HE through use of SWOT analysis and reflective accounts. Lastly, the paper tries to suggest ways forward for policy and practice.

Learning for Sustainability in HE in the Anthropocene era – the new role of HE

Both the Anthropocene and sustainability are contested terms. The view that the Anthropocene is the era of unprecedented and destructive human influence on the planet is adopted here and that it “is political inasmuch as it requires arbitrating between various conflicting human forcings on the planet, between the footprints of different human groups (classes, nations), between different technological and industrial options, or between different ways of life and consumption” (Bonneuil and Fressoz in

(Thomas, 2017) and that it is an opportunity for the development of new ideas and ways of thinking (Arizpe Schlosser, 2019). Sustainability has multiple definitions and for the purpose of this article will be defined in relation to the UN Sustainable Development Goals (SDGs). The SDGs as a political action framework, focus on People, Planet, Prosperity, Peace, and Partnership, and the tensions between them that define the Anthropocene (Lekagul *et al.*, 2022). Thus, sustainability is the vision of prosperity, equity and environmental integrity achieved by realising all the SDGs, making sure no one is left behind. Sustainability as a concept, could flourish in the Anthropocene era as an emergent way of untangling its complexity and motivating political action. Education has much to offer and has been deemed as crucial for the realisation of all SDGs (Avelar *et al.*, 2019).

Learning for sustainability can transform HE in the Anthropocene if it focuses on the systemic integration of all aspects of sustainability to offer a holistic view of the complex nature of the sustainability challenges (Voulvoulis *et al.*, 2022). A systemic integration of the environmental, social, and economic pillars of sustainability would draw attention to safeguarding the safe operating space for all life to thrive, and the reduction of anthropogenic pressure on the earth's systems as goals for education to achieve (Kioupi and Voulvoulis, 2019). Furthermore, it would require social conditions, the just operating space, to be realised, not only to prevent and end conflict but also to establish peace, equity, justice, and human rights as its foundations as another goal of education (*ibid*). The safe and just operating spaces are linked to planetary health and wellbeing concepts that aid in reconciling the satisfaction of current human needs, such as living a healthy life, as well as those of future generations of humans, with those of the non-human world, while maintaining the integrity of the earth systems due to them possessing intrinsic value. Nevertheless, the ways by which human needs can be satisfied differ culturally and will differ across generations.

More importantly, since human needs can be, material, social and psychological, it is important to differentiate between those different types of needs as the satisfaction of material needs can have a detrimental impact on the planet. Researchers have recently found most of the biotic and abiotic components of the earth's systems have been significantly compromised (Richardson *et al.*, 2023), but also that human material needs and impacts differ vastly among different income groups (richest 10% accounted for 50% of global GHG emissions in 2019), both leading to widespread social injustices (OXFAM, 2023). Considering both ecological and social injustices, education would need to focus not only on the SDGs, but also on the inner development goals, i.e. the ways of being, thinking, relating, acting and collaborating that determine one's self-identity (Ankrah *et al.*, 2023) and link with ethics. This self-identity, which is shaped by multiple interacting systems such as family, peers, education, culture, and the biosphere influences how humans satisfy those fundamental needs and how they behave (Schill *et al.*, 2019). It has been shown that self-identity is a crucial determinant of achieving planetary health and wellbeing, as it participates in multiple feedback loops that may enhance or restrict the achievement of a just and safe operating space depending on if narcissistic/highly individualistic or empathetic/relational representations of self, prevail (Oliver *et al.*, 2022). These identities also determine the ability of people to participate in political action, decision-making and activism (Turner-Zwinkels and van Zomeren, 2021).

Human behaviour as an expression of self-identity has been shaped profoundly by evolution and there are specific dispositions that need to be considered, for example humans are pro-social in that human brains crave connections (Schill *et al.*, 2019). This leads to strong social identities but also to conforming to societal norms (Poškus, 2021). Self-identity is influenced by the satisfaction of basic psychological needs, i.e. autonomy, relatedness and competence that drive human motivations and action (Van der Kaap-Deeder *et al.*, 2020). Humans are also part of the biosphere which means they cannot function without the earth's systems and the other living organisms as they are part of complex

networks, cycles, and processes. Although it is difficult for humans to understand their impact across timescales and geographies because they are programmed to focus on the now, the local and the familiar for survival (ibid), altruism and collective action was also part of early human communities and can shape human identity if the appropriate conditions are present (Schill *et al.*, 2019).

There is thus need for transformative learning that enables learners to transform their identities and values and ultimately their realities and their communities (Agbedahin, 2019). This type of learning should aim to develop a critical awareness of self and its relationship with the human and non-human systems with which they interact. Transformative LfS in the Anthropocene should aim to enable the realisation of the inner development goals and engage the learners in complex and challenging situations in which they need to clarify their values, and critically assess their accepted views, actions, and ways of satisfying their needs. It should aid the understanding of the role of oneself in the planetary community by immersing oneself in the local reality they are facing. This necessitates the learner engages with the realities of their local environment, community and consider marginalised voices, their rights, lived experiences and perspectives thus linking with social justice (Lee and Johnstone, 2023). Critical pedagogy can offer ways to critique and potentially reverse the homogenisation of nature and culture at the local level as learners reflect on their own cultural identity and the ways it is shaped by and is shaping the community of which they are part (Corbett and Guilherme, 2021) and invites them to take social action. The very realisation that humans are part of nature, that nature has intrinsic value (Taylor *et al.*, 2017), and that nature and culture are interlinked in many complex ways that lead to material and psycho-social benefits as well as to ecological and socio-economic injustices can transform self-identity and needs to be fostered through transformative learning.

Conditions and implications of transformative learning for self-identity in HE

Adopting the view of ecological self-identity and the transformative learning that can influence its formation in the Anthropocene era, a re-consideration of what HE aims to achieve and how this relates to planetary health and wellbeing as integrated dimensions (Guzmán *et al.*, 2021) is needed. HE would act as the steward of the safe and just space for an ecological self-identity to emerge and as a positive regulator that would enable transactions that assist individuals in developing a broader self-identity aligned to the SDGs. For this to happen both the conditions and implications for HE institutions to consider need to be examined.

Curricular, co-curricular and extra-curricular activities would create space for sustainability debate, ethical inquiry, and a critical view on planetary systems, considering their interactions with self-identity and their resulting outcomes, as well as opportunities for negotiating those identities through interaction with others, with the biotic and abiotic environment and through taking responsibility for action. They would adopt pedagogy to empower learners to fulfil their inner development goals as capabilities for sustainability (Kioupi and Voulvoulis, 2019). These capabilities are cognitive, relating to knowledge and ways of thinking about the Anthropocene; ways of being and relating and ways of collaborating and acting for planetary health and wellbeing. If these more ecological learner self-identities are to emerge, *post-anthropocentric pedagogies* could offer a new lens for educational practice in terms of critical inquiry, breaking silos between the university and the outside world and taking risks in teaching and learning (Pedersen, 2023). These pedagogies would be aligned with the ethical, social and temporal dimensions of the Anthropocene crises and would enable the learners to redefine the human-nature relationship, in alignment with the concept of Planetary Social Pedagogy (Salonen *et al.*, 2023).

One important aspect of the refocused narrative for HE in the Anthropocene is systemic integration and thus foundational is the development of *systems complexity awareness* (Voulvoulis et al., 2022) to facilitate understanding that human and natural systems are intertwined through complex feedback loops that can lead to crucial tipping points in terms of planetary processes such as biogeochemical cycles, climate change or oceanic acidification (Rockström et al., 2009). Linked to this is *perspective taking*, crucial for realising the just operating space (Raworth, 2012), which is important for intercultural understanding and enhancing equality, justice, peace and solidarity in society, but for it to be truly transformative in the Anthropocene it should also touch on the ecological sphere and recognise eco-justice approaches and nature as entity with rights. Integral for sustainability is the ability to *criticise economic models* that promote growth beyond the safe operating space, damaging nature and undermining equity (Trainer, 2021). A *growth mindset* overcoming cognitive boundaries characterised by eagerness, confidence and perseverance to experiment with alternative models, such as regenerative economy, degrowth, or circular economy, (Guzmán et al., 2021) through visioning alternative futures can enable these capabilities. In turn, these capabilities influence more relational self-identities towards ecological systems through experiential learning that engages learners in real-world community problems (Leal Filho et al., 2016), inter and transdisciplinary collaboration (Stewart et al., 2022) or simulations of authentic challenges (Kioupi et al., 2022) for example.

Aligning self-identity and values with *resilience, self-awareness and empathy* (Shephard et al., 2015) is crucial since there are some critical boundaries that lead to very individualistic identities as a response for example to feelings of powerlessness towards the grim prospects for many sustainability challenges (Lawrance et al., 2022). The Anthropocene is linked with homogenisation of nature and culture and this degradation is reflected on human self-identities that narrowly prioritise personal gain over collective benefit and broader planetary health and wellbeing in alignment with capitalistic models of extraction and material wealth (Lin et al., 2023). Learners need to self-reflect and understand their own values and define how they influence and are influenced by the various overlapping social, economic, and planetary systems of which they are part. Resilience can be seen as the ability to persist in the face of adversity and in this case in adhering to a more ecological or interdependent self-identity that recognises the intrinsic value of others and crucially of nature. Empathy includes feelings of deep connection with others and nature and awareness that their plight is affecting our lives and vice versa as humans are reciprocally entangled. At the same time the state of the planet can alter the psychology of learners in positive or negative ways.

On the positive side, offering opportunity for learners to *connect with nature* leads to eco-behaviours (Otto and Pensini, 2017) and it is often overlooked in HE. Young learners feel strongly the need to learn about, in, and from nature, but as they go through the educational system the opportunities for that decrease and in HE they often become minimal (Fletcher, 2021) with the exception of certain biology and geography courses. In HE settings enhancing the experience of nature through outdoor classes, fieldtrips and expeditions, is not enough on its own to influence ecological self-identity; the values around mutualism, compassion and empathy for the natural world should be openly discussed and reflected upon in these experiences as this can enable sustainability attitudes (Satish, 2022). *Ecocentric and eco-justice pedagogies* also dismantle dualisms such as humans over nature and engage the learners not only cognitively but also emotionally and spiritually through reimagining humanity and storytelling for example (Lin et al., 2023).

Enabling *accountability towards nature and society* and recognition of interconnectedness between these multiple components through HE policies, may help learners become exposed to ecocentric views and the realisation that humans have co-evolved and share the planet with non-human species

with which they interact in multiple and complex ways, which cannot always be quantified and analysed. Thus, HE policies and documents should clearly speak about the responsibilities of HE institutions towards nature (e.g. in terms of local biodiversity protection or supporting global conservation efforts) and their accountability towards society (e.g. improvement of local communities or recognising diverse knowledge systems and standing for marginalised populations). This coupled with interaction with other like-minded people may shape the psychological conditions that enable agency to pursue collective action. Research has shown that *organisational level identity* in favour of sustainability is dependent upon the actions (strategies, policies and action plans) the University is taking to be sustainable as well as how it enables sustainability beyond campus and helps solve sustainability crises in the communities (Frostenson *et al.*, 2022) and can influence self-identity.

Opportunities for *multi-disciplinarity or interdisciplinary* may be beneficial in terms of developing collective identities and values that bind people towards common goals and action. So, it would be of benefit to HE institutions to enable staff and students to join formal multi-inter- or transdisciplinary groups from the start of their university life that will enable them show accountability for tasks related to research and teaching but also to decision-making processes and other cross-university/cross-community opportunities. As people may combine many different identities, often arranged in hierarchical structures, these identities shape how they experience HE, and thus *intersectionality* needs to be considered (Hurth, 2010). There is also increasing understanding that identities regarding sustainable development are not stable or linear, but they are transformed constantly depending on social transactions and interactions and thus participation is important (Lundegård and Wickman, 2009). If HE is to be the steward of the safe and just operating space for self-identity aligned with sustainable development it needs to have at the centre of its transformative LfS, *inclusivity*.

Methods

This paper has so far focused on the construction of an argument about the role of HE in the Anthropocene. It suggested a holistic conceptual framework for LfS in HE based on a synthesis of literature, through the lens of learner self-identity, followed by a deep reflection on the implications for such a theoretical lens for HE and suggested some crucial conditions for HE institutions to consider for redefining their role in the Anthropocene. The conditions of the theoretical framework were used as a reflection guide by the authors to analyse HE transformation strategies in their own institutions, draw some lessons and make recommendations. This study was based on the development of two case studies: one at the University of Leeds and the second at University College London. These case studies focused on the analysis of strategies that govern institutional activity on academic and sustainability transformation in the two universities and helped the authors gain some insight into what contributions the theoretical framework could make in terms of transforming HE policies and practices (Baxter and Jack, 2015). Relevant strategy documents were retrieved from the websites of the two Institutions and analysed. The first strategy document is titled University of Leeds (UoL) 2020-2030 academic strategy, and the second one is the UCL 2034 strategy. Aligned within these there are the sustainability strategies of the two institutions and the Climate Plan of the UoL. A reflective SWOT analysis approach was performed by the researchers, as a recommended approach to evaluate trends and policy issues in HE (Benzaghta *et al.*, 2021). The guiding question that the researchers tried to assess qualitatively and interpretively throughout the analysis was the extent to which the conditions identified as crucial for HE in the Anthropocene could be found in the strategies of the two universities.

An analysis of HE strategies for sustainability

Firstly, both University transformation strategies recognise that the crucial Anthropocene crises the world is faced with need a response from the HE sector. UoL has developed an additional Climate Plan to become a net zero campus by 2030 and in doing so assist the city of Leeds to achieve net zero emissions, this plan also includes sustainable travel, research, teaching and learning reform, improved participation in decision-making and responsible investment. This denotes a strength in that there is institutional awareness of universities' operating in an era of increased precarity posed by unsustainability and the Climate Plan presents additional opportunity for the university to align its priorities with regional objectives and larger scale transformation supporting local communities achieve sustainability through net zero.

The strategy of UoL emphasizes three overarching pillars; community, culture, and impact, which are underpinned by the values of collaboration, compassion, inclusivity, and integrity. The focus is on preparing students for the world of global challenges by enabling them to participate in transformative learning experiences, developing work related skills and co-creating their education with academic staff. It further emphasises a focus on collaboration instead of competition and strong links with both the local and the global community to maximise its positive impact instead of only seeking profit. This presents an opportunity to enable and safeguard more relational identities in alignment with sustainability as organisational and collaboration identities play a crucial role in shaping individual self-identities. It also focuses on the social mission of the university and working with the communities and on the learners' inner development goals, it is limited however in including the more holistic view of sustainability and the integration of nature in the debates and actions taken. According to the SOS-UK survey of university students in the UK 86% of respondents believe that all universities and colleges should take action to protect and support nature on their grounds or other lands they own ("Reflections on student perceptions of nature and action within education - News | SOS-UK", n.d.). The UoL sustainability strategy includes as a pledge to enhance biodiversity on campus and sets specific indicators for that. The latest review report (2020-21) discussed biodiversity monitoring efforts, various environmental targets and awards that have been achieved, but a more eco-centric approach bringing nature at the fore of the strategy would be a significant strength.

The UoL emphasises its role as a global leader and research-intensive university which can potentially negatively influence academic identities away from transformative teaching as the need for individual academic excellence may encourage more individualistic identities (Stephens *et al.*, 2012) and could be seen as a threat. However, the strategy mentions that teaching is equally important to research and that both should have a dialogic relationship in that research informs teaching and vice versa which can strengthen these relational identities. The focus is also on teamwork of students and staff and fostering a sense of belonging and inclusivity so they can tackle global challenges together as well as on collaboration with local and international stakeholders to leverage collective strengths for transformation, which presents strong opportunities for transforming self-identity.

The UCL2034 strategy emphasises the disciplinary excellence that has accompanied the reputation of the University as a global leader for many years but at the same time it recognises the need for interdisciplinary debate and discussion. The continued focus on disciplinary excellence is a significant threat as it may negatively impact relational self-identities as strong disciplinary social identities may be formed. The focus on interdisciplinarity could be coupled by transdisciplinarity and become an opportunity to further boost relational self-identities by building stronger sustainability links with the local community and could lead to concerted efforts in tackling the Grand Challenges related with the Anthropocene and specifically climate crisis, inequity, mental health, and intercultural communication that the University prioritises. There is focus on equality as well as on safeguarding academic freedom, and emphasis on success. The university also emphasises values such as integrity and mutual

accountability, openness and inclusion, care and respect and rigour and innovation on which the institutional culture will be built and recognises the need for transparency in decision-making. All are significant strengths and can enable identities if the holistic view of including responsibilities towards nature is more strongly emphasized. The UCL sustainability strategy (2019-2024) pledges to create a more biodiverse and green campus and implement nature-based solutions for climate change and this could be an opportunity to adopt a more ecocentric view.

Both Universities emphasize the need for reform in student education to enable learners to develop skills for a changing world, for positive societal impact and for having a brighter future. This presents an opportunity for both institutions. However, a limited overview of the pedagogies by which this can be achieved in terms of refocusing teaching and learning on sustainability and ecocentrism is provided, which can be a weakness. For this to become an opportunity or even a strength a recognition of the kinds of pedagogies that would enable students develop their inner development goals and critically engage with the Anthropocene would be beneficial, as mentioned earlier in this paper. In terms of staff professional development, the University of Leeds through the Leeds Institute of teaching Excellence (LITE) offers opportunities for staff to undertake scholarship projects on transforming student education and UCL is developing a new Institute for HE Development and Support to connect the dots among fragmented approaches in student education across its faculties. These institutes present significant opportunities for quality research on LfS and for amplifying the impact of successful student education initiatives in this area, if there is steer towards clarifying what direction pedagogical research should take in the Anthropocene. Both universities could do more to recognise the affective and psychological dimensions of LfS and its implications for staff and learners' wellbeing as they could pose threats in their efforts to achieve sustainability.

Discussion

The HE strategies analysed in the previous section, show that sustainability transformation efforts could have contradictory outcomes in terms of self-identity formation. One of the most significant contradictions is the conflicting perceptions regarding the role of HE in society. For many HE institutions this role is aligned with national economic competitiveness and capital accumulation (Gale *et al.*, 2015) and results in increasing fees for student attendance, compliance with league tables of academic excellence, and pursuing research priorities based on funding availability and commercialisation of research outcomes (Maisuria and Cole, 2017). This could jeopardise relational self-identity development for staff and students who may only see the institutions as a profit-making businesses which will enable them to pursue personal career goals and affluence in life. Affluent self-identities have been found to be more influential than environmental self-identities, even if one holds both, as they are more socially desirable, and bring more social rewards and self-esteem (Hurth, 2010). A focus on establishing a culture of sustainability, participation and inclusion as norms through the University's transformation strategy could enable more relational organisational level identities spread in the community through peer and social influence. Both peer and social influence have been associated with heightened motivation for sustainable behaviours, compliance with social norms and environmental identities (Islam *et al.*, 2024; Ly, 2024).

Another contradiction inherent in HE is the research excellence-focused academic progression policies. This is usually discipline or performance based and does not enable staff to meaningfully engage with sustainability initiatives given their often cross-departmental, inter and trans-disciplinary nature (Gale *et al.*, 2015). There is often inadequate institutional support and incentives for those willing to integrate LfS in their activities (Hoover and Harder, 2015), and most of the efforts lie primarily on overcommitted members of staff (Krizek *et al.*, 2012). In addition, engagement with sustainability initiatives does not provide credit for academic or professional progression, nor is it part of the criteria for employment/promotion. Staff engagement in sustainability and community action

should be recognised for example in hiring and promotion criteria but also in probation requirements, sabbaticals, workload allocation and other areas (Gardner *et al.*, 2021). The same applies for students, who should be expected to engage with sustainability not only through their studies but also through participating in university and broader community life. Recognition for students could be in the form of transcripts, micro-credentials, scholarships, awards or other qualifications and requirements for specific “sustainability credits/contributions” for them to graduate.

University rankings may establish an institutional culture that shapes academic identities in prioritising competition over cooperation (Nixon, 2020). Within the UK university sector this has resulted in sectoral fragmentation, institutional stratification, and professional atomisation. This detrimental influence on academic identity may well re-focus academics on individualistic self-identities. This is further compounded by the emphasis placed in specific rankings on research activities. Research funding has increasingly been provided through competitive grant funding streams that are tailored to solving specific problems set by funders and that are separate from funding tied to students and their learning (McCune, 2021). This leads to further implications for the development of an academic identity. It favours personal excellence, manifested through successful research activities that reaps benefits such as academic progression for individuals, and disregard for teaching and a more relational identity that cares for the often-under-rewarded development of student learning. Putting at the hearth of university strategies education, rewarding teaching activities and enabling staff gain education qualifications could help them develop academic identities that are teaching focused, express values that prioritise care for students, and embrace high standards of teaching (McNaughton and Billot, 2016; Pretorius, 2014). These teaching identities would be more compatible with demands for transformative LfS by students, ESD practitioners and researchers, as they would enable academics re-balance disciplinary excellence and research with personal development as educators who offer authentic learning experiences to their students. Finally, enabling teaching and learning partnerships between students and staff can enable the former develop ownership of their learning and contribute to a sustainable curriculum that is meaningful for them and the latter to invest time in professional development and HE scholarship in student education.

Professional development of staff has been identified as an important driver for ESD integration in HE (Vogel *et al.*, 2023) and an area in which Universities lack continuous opportunities for training staff. Continuous engagement of students with sustainability is another problematic area. There is need for more meaningful and systematic training and engagement and because sustainability requires interdisciplinarity, transdisciplinarity and sharing of lived experience, one-off opportunities will not suffice. A continuous provision that may include experiential learning workshops, discussion forums, communities of practice, action-oriented opportunities, will assist with development of skills in interdisciplinary teaching and learning, sustainability competence, critical reflection, managing emotion and maintaining hope (Vogel *et al.*, 2023), which are areas important for LfS in the Anthropocene and can enable self-identity transformation.

Increased awareness by HE leaders, practitioners, researchers, staff and students that self-identities are shaped by and are shaping LfS in HE is a positive step forward as it may lead HE institutions to examine and reform policies and practices that may jeopardise more relational self-identities. Frameworks such as the one developed in this study may enable HE leaders to consider the impact of their policies, practices and strategies on the self-identities of students and staff, promote more ecological self-identities and articulate priorities for nature. To do that, HE institutions should more proactively pursue, recruit and promote university leaders with qualifications in transformative leadership, change management and institutional sustainability at all levels (presidents, directors, heads of department, and heads of committees).

Strong commitment and support from the university leadership towards sustainability and social innovation (Aung and Hallinger, 2023; Iqbal and Piwowar-Sulej, 2022) can be transformative for the

mission, policies and practices of the institution, as it can enable multi-stakeholder commitment, which is an important determinant for the development of organisational identities towards sustainability. HE leadership teams should emphasise that involvement with sustainability is a whole community business and offer student and staff engagement opportunities as well as monitoring operations so that the universities can achieve the net zero, energy consumption, waste reduction, green space enhancement and other nature specific targets. There is also necessity for emphasising the responsibilities of HE Institutions towards nature more strongly in these policies, practices, and action plans. There should be clear commitment of how nature is integrated into the plans of university and how it is regarded as an important stakeholder to be consulted. Further the psychological connections with nature should be given importance as well as ways to enhance health and wellbeing of students, staff, and other living things through systemic interconnections.

Fostering a culture of inclusivity and collectivity, through respect for individual self-identities and opportunities for wider participation in the HE institution decision-making should be top in the agenda of the transformational leaders (Sart, 2023). Enabling reflective practice in research, teaching and learning and community engagement is another area that these leaders should focus acknowledging that sustainability is not only an important public concern but an area in which urgent action by HE is required. This realisation can open new teaching and research funding opportunities (for example through reinvesting income from student fees) and professional development to enable the collaboration across boundaries and lead to the desired interdisciplinarity and transdisciplinary collaboration (Sterling, 2013) and identity shift towards sustainability. More research is needed to clarify how self-identities are shaping and are being shaped by HE institutions especially at the intersection of sustainability and organisational change and how these may enable or impede efforts of sustainability transformation in HE.

Conclusions

The Anthropocene was defined an era of utter human destruction of the planet fraught with ecological and social injustices. This article tried to establish what kind of LfS specifically in the HE sector would change the narrative in the Anthropocene to enable more ecological and relational self-identities to emerge as crucial determinants of human behaviour and action for sustainability. A holistic conceptual framework was developed that aims to refocus the role of HE as the steward of self-identity and the conditions that would enable its transformation from having a more anthropocentric focus towards a more holistic ecocentric focus, which is missing from the current literature on ESD. The conceptual framework was applied in two university cases studies and the SWOT analysis and reflection revealed the systemic barriers that may hinder HE’s potential to safeguard a more relational self-identity. These barriers could be summarised as potentially stemming from weakly integrated social mission of the university and limited commitment to maintaining nature’s integrity in the transformation strategies. Practical recommendations concern a refocusing of the role of HE leadership to enable transformation and organisational identities towards sustainability as well as professional development of staff in transformative pedagogies and opportunities for students to co-create their education for sustainability. What is more, a clear reference of the commitment of HE towards nature and society should be included in all policies, strategies, and action plans for sustainability, as well as offering structures and support that enable inclusion, participation and cross-boundary collaboration from the start of a student’s or staff’s HE journeys. Limitations include the application of the conceptual framework to the author’s own institutions (both coming from Global North backgrounds), which is used as an example of how this tool can help higher education practitioners analyse and refocus policies for sustainability in the Anthropocene. Future research can focus on the application of the framework to new case studies from Global North and South institutions and an assessment of the impact of more ecocentric HE policies on learner self-identities.

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