

Transformative, transgressive social learning: rethinking higher education pedagogy in times of systemic global dysfunction

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The nature of the sustainability challenges currently at hand is such that dominant pedagogies and forms of learning that characterize higher education need to be reconsidered to enable students and staff to deal with accelerating change, increasing complexity, contested knowledge claims and inevitable uncertainty. In this contribution we identified four streams of emerging transformative, transgressive learning research and praxis in the sustainability sciences that appear generative of a higher education pedagogy that appears more responsive to the key challenges of our time: (1) reflexive social learning and capabilities theory, (2) critical phenomenology, (3) socio-cultural and cultural historical activity theory, and (4) new social movement, postcolonial and decolonisation theory. The paper critiques the current tendency in sustainability science and learning to rely on resilience and adaptive capacity building and argues that in order to break with maladaptive resilience of unsustainable systems it is essential to strengthen transgressive learning and disruptive capacity-building.

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Introduction and problem statement

Presently much attention is being given to sustainability in science and society [1–4]. In many global reports focussing on this relation, there is agreement that sustainability requires a reorientation of education and training, including higher education [1]. UNEP's recent

2014 Foresight Report framing key issues for the 21st century, suggests that while society has confronted and produced large amounts of knowledge of numerous complex global environmental challenges, it lacks the capacity to respond to these challenges. Knowledge of issues is in and of itself inadequate, and UNEP [3] suggests a range of action-oriented capabilities, including development of 'new modes of learning' (p. 7 our emphasis).

There is a burgeoning literature on the need for more radical social learning-centred transformation in relation to sustainability concerns [3,4,5^{**},6^{*},7]. Since the early work of Rachel Carson's [8] *Silent Spring* a plea has been made for behavioral and social change, yet how this occurs via learning processes remains a key under-researched area in the sustainability sciences [5^{**},9–11].

Sustainability concerns are most often described as 'wicked problems' or nexus issues characterized by high levels of complexity, ambiguity, controversy and uncertainty both with respect to what is going on and with respect to what needs to be done [12,13]. The indeterminate and boundary crossing nature of sustainability issues, coupled with the urgency to act, makes for a volatile environment in governance, policy, education and research, and creates new challenges for higher education. In this conceptual paper, we suggest it also creates new challenges for rethinking learning and pedagogy.

Transformation in higher education pedagogy and learning

There has been discussion on transformation of higher education and how universities should respond to sustainability concerns. For example, Sterling [14], described four different responses to the challenge of sustainability: denial (it's a hype that will go away), bolt on (add a 'green aspect' to a curriculum or programme), built-in (important enough to integrate in all we do) and whole system re-design (we need to re-think the very foundations of what we currently do). It is the last response that suggests a paradigm shift and a transition towards doing better things differently (transformation) rather than doing what we do better (optimization).

From transdisciplinary theorising we obtain pedagogical guidance such as that offered by Hirsch Hadorn *et al.* [15] who say 'by transgressing disciplinary paradigms and

surpassing the practical problems of single actors, trans-disciplinary research is challenged by the following requirements: to grasp the complexity of the problems, to take into account the diversity of scientific and societal views of the problems, to link abstract and case specific knowledge, and to constitute knowledge with a focus on problem-solving for what is perceived to be the common good'. Garuba [16] provides guidance too in suggesting that to effect substantive transformations in higher education, there is need to adopt a transformative approach of 'thinking how the object of study itself is constituted, what tools are used to study it and what concepts are used to frame it' (p. 1).

Following Garuba's notion of how the object of study is constituted, one might look into some of the concepts that are being put forward in the sustainability sciences and examine their implications for pedagogy. For example, the concept of 'resilience' is increasingly being used as 'core concept' guiding curriculum and learning for structuring governance, management and research in the context of climate change. The concept is borrowed from ecology, and denotes an apparently inherently good, self-preserving quality of a system in a changing environment [17]. Resilience as such leads to a form of conservatism: it is a system's property that strives towards stability and continuity. It is most often used to refer to 'the capacity of a system to absorb recurrent disturbances' [18]. However, little is said about the fact that such a concept may well be inadequate or inappropriate for leading to sustainability, especially when viewed from a social science/learning perspective. There are many 'unhealthy' systems that are very resilient for instance. Some might consider capitalism a very resilient system that is hard to change. Applied to the social sciences, Neocleous [19] describes some of the roots of resilience thinking as originating in the establishment of conservative military systems while Olsson *et al.* [20*] in a recent review of the use of resilience as concept in the social ecological sciences suggest that resilience thinking can potentially end up promoting functionalism, neoclassical forms of thinking and a form of scientific imperialism when applied uncritically to the social. Sriskandarajaha *et al.* [23] in a paper on resilience in learning systems write about 'breaking maladaptive mental resilience' (ibid, p. 564) where maladaptive mental resilience refers to '*a potentially unhealthy persistence of unsustainable ways of thinking and acting in light of emerging dangers, threats or pressures*' (ibid, p. 565).

Addressing the root causes and contributing to climate change prevention and mitigation may thus require a focus on the breaking down of the resilience of inherently unsustainable systems/practices/routines and the development of the disruptive capacity and competence needed to do so. Neocleous [19] argues for more substantive forms of *resistance*, or socially transformative, *transgressive* forms of social agency and human activity rather than

social resilience and Olsson *et al.* [20*] argue for an uptake of agency, power, conflict, contradiction theory in relation to the emerging tradition of ecologically inspired resilience thinking. This has implications for sustainability oriented higher education pedagogy.

Disciplinary boundaries

In defining environmental concerns in terms of coupled social–ecological systems, or as 'post-normal' science [21] and 'wicked' problems [12], a growing body within the scientific community suggests that issues need to be understood and engaged via transdisciplinary perspectives across multiple institutions involving multiple actors [3,15]. Yet, the reality is that mono-disciplinarity and mono-sectoral practice and governance activities remain dominant. In order to transform for the sustainability turn or transition, people everywhere will need to learn how to cross disciplinary boundaries, expand epistemological horizons, transgress stubborn research and education routines and hegemonic powers, and transcend mono-cultural practices in order to create new forms of human activity and new social systems that are more sustainable and socially just.

Sustainability concerns are also highlighting that the structural frameworks for pedagogy and learning in higher education may not be fully adequate for addressing the challenges of the times. Gordon [22], in his paper on 'disciplinary decadence' explains that it was the efforts to colonise reason that led to the generation of disciplines. He explains: 'Although disciplining...has resulted in a variety of disciplines, the underlying goal of maximum rationalisation has been consistently strained. The source of such difficulty — *reality* — has been unremitting' (p. 85) as 'reality is not always obedient to consciousness...'. In effect, Gordon is making an argument similar to those concerned with transdisciplinarity in the social–ecological sciences which proposes that there is 'always *more* to, and of, reality' than any discipline can deal with. Significantly, Gordon's critique goes on to explain that difficulties in appreciating and engaging reality can take the form of recoil, that can lead to 'an inward path of disciplinary solitude' which he describes as leading to 'disciplinary decadence'. Disciplinary decadence, he explains, is 'the phenomenon of turning away from living thought, which engages reality and recognises its own limitations, to a 'deontologised' or absolute conception of disciplinary life. The discipline becomes, in solipsistic fashion, *the world*'. (ibid, p. 85) This world becomes regulated by methodology and rules.

Interdisciplinarity has emerged as a response to this problem, but Gordon (ibid) suggests that it too has a 'decadent structure', '...because presumed disciplinary completeness of each discipline is compatible with disciplinary decadence'. He then goes on to suggest that 'a more hopeful route is *transdisciplinarity*, where disciplines

work *through* each other' (p. 86). However, transdisciplinarity too can be susceptible to decadence if it fails to bring reality into focus. Achieving such a form of transdisciplinary engagement requires a '*teleological suspension of disciplinarity*', which is 'the willingness to go beyond disciplines in the production of knowledge' (ibid, our emphasis). Significant for transformative, transgressive forms of thinking and pedagogy is the insight from Gordon that '*Teleological suspensions of disciplines are also epistemic decolonial acts*' (ibid, our emphasis), that is, they are, and must be transgressive of the norm. In seeking a science that is more reality congruent, transgressively transformative and more reality engaged, it is not surprising therefore that the sustainability sciences are turning to transdisciplinarity as a means of transformatively engaging the world, involving co-engaged forms of knowledge production and pedagogy.

Transformative, transgressive learning

Transition systems research focusing on sustainability transitions, suggests that radical innovations emerge in niches,

... where dedicated actors nurture alignment and development on multiple dimensions to create 'configurations that work' ... Niche-innovations may break through more widely if external landscape developments create pressures on the regime that lead to cracks, tensions and windows of opportunity [23], p. 495.

The idea of niche-innovations is a conceptualization of teleological suspension of disciplinarity. Transition researchers such as Geels (ibid) foreground the role of 'interpretive actors' that fight, negotiate, search, and learn with others how to bring about such transformations. The IPCC [4] also confirms the significance of engaging with transformative learning and praxis at niche level, and suggests that local institutions are important for social engagement in climate change response and other sustainability oriented practices. Here participatory and deliberative democracy approaches [24,25] are typically seen to be important for bringing diverse people and institutions together to realize transformative sustainability practices at the co-learning and co-engaged knowledge co-production interface.

While Mezirow's [26] view of transformative learning is often used to frame discussions on transformative learning, its focus is mainly in on cognitive transformation/s of individuals. This does not fully theorise the relationship between cognitive transformations and social action or agency, especially collective transformation of human activity [9]. In reflecting on the need for transformative learning from a decolonising perspective, Gordon [27*] suggests that a form of leadership and learning is needed that involves serious and substantive 'Meditation on, and

cultivation of maturity of how to negotiate, live, and transform a world of contradictions, paradoxes, uncertainty, and unfairness' (p. 91).

In considering this, we have identified four streams of emerging transformative, transgressive learning research and praxis in the sustainability sciences: (1) reflexive social learning and capabilities theory, (2) critical phenomenology, (3) socio-cultural and cultural historical activity theory, and (4) new social movement, postcolonial and decolonisation theory. We propose that engaging with these streams can help in re-thinking learning and pedagogical development in higher education in order to avoid conservative resilience thinking and to decolonialise environmental pedagogy.

Transformative, transgressive learning shaped by reflexive social learning and capabilities theory

O'Donoghue et al. [28] argue that that transformative learning constitutes situated processes of reflexive learning around tensions, discontinuities and risk in local contexts in multi-actor groups. Wals and Heymann [29*a] argued that conflict and dissonance is a source of learning in sustainability. Laclau and Mouffe [25] (speak of engaged 'agonism' where discontinuities, tensions and risk become generative in a collective struggle. Wals and Schwarzin [13, p. 13] suggest, however, that this is not to be equated with problem-based learning only. They suggest that routine problem solving approaches fall short of what is needed for transitioning towards a more sustainable world. Instead they suggest that such transitions require

... a more systemic and reflexive way of thinking and acting, bearing in mind that our world is one of continuous change and ever-present uncertainty. This suggests that we cannot think about sustainability in terms of problems that are out there to be solved or in terms of 'inconvenient truths' that need to be addressed. Instead, we need to think in terms of challenges to be taken on in the full realization that, as soon as we appear to have met the challenge, things will have changed and the horizon will have shifted once again. (p. 13)

Examples of such learning show that such learning requires 'hybridity' and synergy between multiple actors (ibid). This involves the blurring of, or boundary crossing between formal and informal learning in ways that are conducive to dialogic interaction and the emergence of sustainable organizations (ibid).

The capabilities approach to social justice [29*b,30,31], views transformative and transgressive learning as one of several intrinsic values to human well-being [32*]. The capabilities approach also suggests that engaging with discontinuity, and 'agonism' in multi-actor groups as

discussed above, is not only an instrument or means to achieve the end of well-being in terms of localized and individual sustainability. Rather, the capabilities approach reminds us that transformative and transgressive learning, including the beings and doings that such learners enact, may function as one dimension of human flourishing (speaking with Nussbaum) or freedom (speaking with Sen) and as such is an end in itself. From an ethical point of view, approaching transformative and transgressive learning as a capability and functioning in the sense that is put forward in the capabilities approach, reminds us of the strong moral significance of learning. Importantly for higher education pedagogy, if transformative and transgressive learning can reasonably be defended as a kind of capability and functioning, and therefore be seen as an individual positive freedom (again speaking with Sen), educational authorities and higher education institutions, will have an obligation to disseminate learning resources and environmental, institutional and social conversion factors to learners that allow them to explore the possibilities of transformative and transgressive learning resources and conversion factors since, in a transgressive learning contest, that might actually lead to radical system change or at least a disrupting of hegemonic moral, epistemological, among others, norms that actually works in the favour of the same authorities or institutions. From here, we may argue that university student's moral right to be able to transform and transgress in engaging with discontinuity needs no further warranting.

Transformative, transgressive learning processes influenced by critical phenomenology

We can also observe transgressive and transformative learning processes in an eclectic collection of phenomenological work from various different disciplines, that span over a century, specifically that which emerged from deep ecology [33–36], social sculpture [37–40], Goetean observation [41,42], Animism [43,44], Anthroposophy [45,46], aesthetic education [47,48] and embodied ecological citizenship/education [11,49–53]. What these different explorations into phenomenology have in common is a need to transgress the boundaries between inner and outer worlds in the human being, as a means of transformation and transgressive agency development.

With deep ecology, embodied ecological citizenship, animism and social sculpture, there is a clear impetus to address the body-blindness that occurs in contemporary technocratic managerial ideologies of industrial capitalism that have influenced education. Reid and Taylor [54b] observe these as complexly entangled in the Western history of thinking in subject/object dualisms. They offer the philosophy of art developed by John Dewey [47] as a valuable contribution to developing non-dualistic understanding of the individual within a matrix, and connecting this to democratic freedom [49]. The aesthetic dimension of public culture, is seen by Dewey [47] as

central in overcoming crippling dualisms of Western modernity that impair participatory engagement [49] and indeed transformative and transgressive social learning. Understanding that learning that involves the phenomenological experience of the learner provides new opportunities for inquiry that does not separate *object and subject* or *place and person*, as Greenwood [53] explains, ‘place-based inquiry and direct encounters with communities lead to democratic participation and social action within the local environment’ (p. 275), therefore expanding the possibility for transformation and indeed transgressive learning. Similarly McKenzie et al. [51] describe how ‘culture and place are deeply intertwined’ (p. 7) and result in the potential for places and geographies as transformative/transgressive forces that are profoundly pedagogical in themselves.

Phenomenology relies heavily on developing intuitive sensitivities, which Zumdick [42] in his work on aesthetic education and poetic imagination of the human being for the 21st century described as the third force or third key capacity for social and ecological change. He explains that the first two forces of imagination and inspiration that occur through inward reflecting and experiences of inner and outer worlds are not fantasy or escapism, but really a phenomenological encounter with the substances of both realities. They are preceded by this third intensified force of the ‘will’, which he described as what occurs when we are closely connected to an encounter. He also explains that our thinking and feeling is enhanced and we are mobilised and motivated in a way that propels us to act, which is derived from real encounters with the world, and so enables us to be less frantic and more confident in ourselves, to be more confident about what needs to be done, and we shift our stance from one of manipulation to one of reciprocity [42].

Zumdick [42] described our world today as a huge laboratory, where millions of people are looking for new forms of living, new forms of participation, new materials, and new techniques. Yet, as he argues, this laboratory also has to change from the technical, scientific, political and economic sense into a laboratory that also researches our inner abilities and potentialities: that investigates *Imagination, Inspiration* and *Intuition*. Zumdict [42] explained, ‘If we are able to realize this, our relationship to the outer world will become more and more responsive, and might better serve us in developing what is usually described as a sustainable future.’ (p. 5) Neither McKenzie et al. [51], nor Jickling [52] advocate for an abandonment of scientific and philosophical reasoning, they argue that rather emotional or phenomenological experience adds vital dimensions to learning, and expands learning. Significant to a re-thinking of higher education pedagogy, Jickling [52] says, ‘*experiential understandings adds flesh and life to the bones so often polished smooth and white by analytical thought.*’ (p. 168, our emphasis)

Transformative, transgressive learning processes influenced by socio-cultural and cultural historical activity theory

While not always directly related to the sustainability problem, there is a vast and rapidly emerging body of post-Vygotskian learning research that focuses on the socio-cultural and socio-historical dynamics of transformative learning which shows that learning *can* lead development in open-system formations. Here the arguments focus in on multi-voicedness and engaging with contradictions, and the way in which expansive learning leads to transformative agency [54a,55,56**a]. Within this body of research, one can find much evidence of how learning *can* lead development, as well as how such learning also stimulates and contributes to transformative agency amongst multi-actors in the learning process. Applied studies using this approach show that transformative expansive learning can also lead to increased cognitive justice [56**b] in learning processes that take account of power relations in co-learning configurations [57]. Such a perspective on learning transgresses the norms of ‘learning’ as ideational engagement to include transformative praxis engagements and the development of new human activity that produces a view of culture as aspirational and open to systemic change and transformation [56**b,57–60] rather than seeking its own absorbing of recurrent disturbances. Education, as explained by Vygotsky [61], is critical to the ontogenesis of culture. His work highlighted that education, in this case sustainability oriented higher education, can potentially enable someone to become what they are not yet (i.e. becoming). Engeström’s post-Vygotskian research shows that communities can similarly transform their activity via expansive learning.

Especially interesting for transformative, transgressive learning is the insight from expansive learning research [56**a] that it is the identification of ‘germ cell’ activities that can foster and lead to substantive social change at multiple levels. Germ cell activities are those activities that embody a potential response to deep seated societal contradictions, and combine critical social and/or historical-material processes with values, dispositions, cognition and individual and collective agency capabilities to lead expansion, change and transformation. Evidence from socio-cultural expansive environmental learning studies involving university researchers collaborating with fishers, farmers, foresters, environmental managers and local communities in Africa [56**b,57–60] show that expansive learning processes that also foreground cognitive justice (i.e. where the views of all multi-actors are afforded value and validity in engaging contradictions and seeking out new forms of human activity), new forms of agency emerge which can be identified via various ‘agency expressions’ that include resistance, critique, explication, reframing, envisioning, committing to actions, navigating power relations and taking transformative action [60,62]. This provides a useful means of reflexively reviewing how the

processes and outcomes of transformative, transgressive learning support teleological suspension of disciplinarity.

Transformative, transgressive learning processes influenced by new social movement, postcolonial and decolonisation theory

As indicated above, social–ecological systems transition theorists suggest that transformations to sustainability occur in ‘niches’ at local level, and it is from this level that wider social changes and regime shift transformations can be driven/emerge [63]. However, socio-technical transitions to sustainability do not come about easily, ‘because existing ... systems are stabilized by lock-in mechanisms [or structural factors] ...’ [64]. These also hold poverty in place, and create social discontent, as can be seen by social movement protests in many areas of the world today where persistent poverty, social injustice and associated forms of environmental injustice linked to the commodification of water, land and life are the object of discontent [65,66**].

Drawing on theorists such as Fanon, Gordon, Spivak and others, social movements are currently dealing transgressively with the continuities of a ‘lived experience’ of racism, exclusion, epistemic and environmental injustices [66**], issues which are producing insecure and uncertain futures for young people, demanding new ways of theorising and practicing agency for more just and sustainable futures. Gordon [22], in analysing the significance of Fanon’s work for universities and their tendencies to ‘ontologise their disciplinary perspectives in the name of addressing concerns that may be beyond the scope of their disciplinary assumptions,’ suggests that ‘the challenge becomes one of radical engagement and attuned relevance’ (p. 103). In such a context, there is need to foreground a concept of transgressive learning as suggested by Neocosmos ([67], p. 20) who, writing decolonization politics in the global South suggests that, ‘If any teaching is to be done it should emphasize *the struggles for an equal and just society and a dignified life*. ... One cannot search for emancipatory inspiration in past or present idealized cultures, but *only in the exceeding of culture through the contradictions which it itself engenders*’ (our emphasis). Viable examples of such pedagogical processes can be found in the transgressive learning processes of social movements working on social–ecological nexus (e.g. the Columbia Eco-Village movement [68] or counter-hegemonic mapping and other transgressive pedagogies [69**,70] and in the cases of expansive learning in Africa referenced above.

Such pedagogies tend to seek out, and value ‘disruptive competences’ that are oriented to absencing absences or ills in society. ‘Change-oriented or transformative environmental learning in this sense, is seen as relational reflexive movements of *transformative elimination* of absences or ills in and through learning processes’ [71].

Conclusion

The transformative, transgressive forms of learning described all require engaged forms of pedagogy that involve multi-voiced engagement with multiple actors. They also have an emphasis on co-learning, cognitive justice, and the formation and development of individual and systemic agency. Their focus is the public *and* the personal good. In such pedagogical processes, knowledge co-production is positioned under scientifically new or 'post-normal' conditions [72**]. At the core is also the emergence of a form of disruptive competence in and for higher education. Paraskeva [73**] suggests that considering aspects such as broader forms of knowledge co-production, decolonisation of thinking, and disruptive competence and agency in and through curriculum, provides opportunities for a radical, itinerant curriculum process that can allow an understanding of 'how reality can explode in and change the real.'

Such forms of pedagogy and learning are only beginning to emerge in higher education, mainly under the banner of engaged research, transdisciplinarity and/or transgressive decolonising pedagogies. In concluding, we argue that if we are to fully expand the 'learning modes' needed for responding to and engaging the wicked problems of sustainability, via pedagogies that are not constrained by current use of conservative and maladaptive concepts (e.g. the resilience concept), or by disciplinary decadence as outlined by Gordon, then there is need for more exploratory, transgressive forms of learning in our institutions. Ultimately these will require an *integration* of sustainability-oriented higher education teaching, research and community engagement processes into possibilities for learning that allows for the emergence of agency and lived experience in transformative praxis contexts. Such transformations in pedagogical set-up, must also teleologically suspend disciplines in transgressing taken-for-granted norms, existing ethical and epistemological imperialism in society and higher education, and provide possibilities for engaged, lived experience of transformative praxis for all of our students; to be seen as learning capability necessary for encountering the future.

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