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engaging with sustainability in higher education**

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# **The Paradox Model: Towards a Conceptual Framework for Engaging with Sustainability in Higher Education**

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## **Abstract**

The growing awareness of climate change, biodiversity loss and the wider global environmental emergency has led to calls for decisive and immediate action from all sections of society. In this paper we consider the question of how universities should respond and what role they might best adopt in current circumstances. We present a conceptual framework, the paradox model, which places sustainability within the contradictory, messy and uncertain terrain that characterises Higher Education. This is derived from our own experience of leading sustainability within one UK university as well as our continued engagement with educational theory and philosophy. We identify two fundamental contradictions or paradoxes facing those seeking to engage in sustainability in Higher Education: (1) how to develop authentic sustainability responses within the context of existing higher education structures and processes (2) How to reconcile the demand for immediate action with the much more gradual processes of education. We represent these two paradoxes as intersecting axes on a diagram which creates four quadrants in which a diverse range of responses can be located. The point where these two axes intersect is particularly significant and provides a place from which to navigate responses both individually, collectively and institutionally. We argue that wisdom provides a guiding principle for discerning which type of response might be appropriate in any given context. It may also indicate a route towards institutional change and underpin the vision of the ecological university of the future based on principles of civic responsibility and social justice.

**Keywords:** paradox; conceptual framework; sustainability education; higher education; wisdom

## **The Paradox Model: Towards a Conceptual Framework for Engaging with Sustainability in Higher Education**

### **Introduction**

There have been warnings of an impending global environmental crisis for over 50 years but in recent times the scientific community has become increasingly outspoken about the extent of the challenges which lie ahead and the importance of immediate action. As the evidence base grows ever stronger, the latest reports from the Intergovernmental Panel on Climate Change (IPCC, 2018) and Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES, 2019) both advocate radical and immediate change to avert disaster. Eleven thousand scientists have issued a 'clear and unequivocal warning' that planet Earth is facing a climate emergency which they believe represents a 'catastrophic threat' (Ripple *et al.* 2019, p. 8). Similarly, the critical extent of global biodiversity loss is now incontrovertible (WWF, 2020, UNEP, 2020). The urgency of the situation was brought firmly into the public domain by Greta Thunberg at the World Economic Forum in Davos in 2019 when she declared, "I want you to act as if you would in a crisis. I want you act as if our house is on fire. Because it is". Thunberg's words are challenging not least because they suggest the need for certainty and a collective commitment to strategies that can be applied without delay. Emergencies, as climate scientist Mike Hulme (2014) points out, demand quick and rapid responses and they can't be ignored. The recent outbreak of the covid-19 pandemic presents an interesting case study of emergency responses. In the UK, scientific evidence was initially condensed into simple mantras such as 'stay home, save lives'. Although this was very successful in generating short-term radical behaviour change, the limitations of the approach quickly emerged in terms of reducing levels of public compliance, eroding economic performance and declining human health and wellbeing. The real challenge of securing lasting behaviour change in response to Covid-19 is then a classic example of a complex dilemma. Rittel and Webber (1973) call these dilemmas 'wicked problems' because they keep changing and have multiple dimensions. Additionally, Hulme reminds us that rather than attempting to 'solve' problems such as climate change it may be better to try to reframe the issues so as to achieve incremental gains through 'clumsy solutions' (2018, p.138). The global challenge of balancing environmental limits on the one hand and social deprivation on the other (described by Kate Raworth as a 'just and safe space for humanity'), needs to be understood in these terms (2016, p. 11).

Education has long been seen as making a key contribution to solving society's problems and is now widely regarded as an essential part of the required response to the global crisis. It is, for example, implicated in all 17 of the UN Sustainable Development Goals SDGs (United Nations, 2020) and highlighted in goal 4 which has an explicit focus on quality education. However, education can take many forms and be harnessed for all manner of causes. A generation ago, David Orr argued that education was at least partly responsible for exacerbating environmental problems. He cautioned that without attention to basic principles and values, education could merely equip people to be 'more effective vandals of the Earth' (1994, p.5) and he noted that unless education was reformed it would only compound our problems. 'It is not education that will save us', Orr concluded 'but education of a certain kind.' (1994, p.8). Today, the need for a different kind of education is also increasingly recognised by young people: the youth-led campaign *Teach the Future* (2020) calls for an urgent repurposing of the entire education system around the climate emergency and ecological crisis. Similarly, the student climate strikes which erupted in many countries of the world in 2019 demonstrated the concern that young people have for the future.

Universities have traditionally been understood as making a wider contribution to society and acting as spaces for independent and critical thinking. They bring together research, theory and practice to inform our understanding of what good education might look like in what Hicks (2014) has termed 'troubled times'. This makes them an appropriate place to explore the 'deceptively difficult' (Bainbridge, 2020) educational questions that the environmental crisis presents. Furthermore, the civic tradition of universities positions them as potential leaders for the public good. However, the higher education sector has experienced enormous change over the last few decades as institutions have been forced to respond to marketisation and commercial pressures. Universities must now accommodate multiple agendas such as inclusion, employability and student satisfaction. The dominant neo-liberal educational discourse places an ever-growing emphasis on standards, targets, accountability and league tables which have become part of a 'global testing culture' (Sterling, 2017, p. 34). This agenda, which marginalises many of the fundamental issues facing society today, has met with growing dissatisfaction with the result that a discussion has opened up around alternatives. The whole-of-university approaches to sustainability education proposed by McMillan and Dyball (2009) represents one response. The Okanagan Charter, devised by delegates from thirty-three countries, takes a different stance in that it sets out the idea of the health promoting university designed to 'strengthen communities and contribute to the well-being of people places and the planet' (2015, p.2). Meanwhile, the notion of the 'ecological university' which is part of a global academic community with an active concern for the whole Earth proposed by Barnett, paints an even

broader vision. Whilst Barnett's ideas might be critiqued as idealistic, he raises a crucial question when he asks, 'What, if any, is the responsibility of the university in the world today?' (2018, p.28). This is also a question being raised by the newly formed Civic University Network (2020) with the aim of maximising the civic impact of universities in their specific contexts. These responses demonstrating the timeliness and pertinence of questions about the role and responsibilities of universities in the 21<sup>st</sup> century.

This paper aims to explore the responsibility of universities in the context of the global environmental crisis. As a sector Higher Education has been slow to adapt its practices and accept the need for transformative change, prompting Sterling *et al.* (2013), Hicks (2014) and Assadourian (2018) all to conclude that it is 'maladapted' to current conditions. However, as environmental problems have become ever more pressing, increasing numbers of institutions are coming to accept that sustainability education can no longer be ignored or considered a minority interest. Across the world, universities have declared climate emergencies, and many have signed the SDG Accord which commits them to embedding the United Nations Sustainable Development Goals in their leadership, research and educational activities. Although the impact of such institutional commitments to sustainability has been variable and the pace of change is slow, there is evidence of a growing momentum particularly at a grass roots level, as the articles in this issue of IJSHE show. Significantly, the covid-19 pandemic has demonstrated the potential for universities to respond rapidly and decisively when they really need to and they have shifted their teaching and learning into virtual modes, amended assessment briefs and revised academic processes with unprecedented speed. The global environmental crisis presents an even more fundamental challenge as it raises questions about the role and purpose of universities. Our interest here is to explore how the sector can meaningfully respond to 'the fierce urgency of now' – a phrase which Martin Luther King memorably used in several of his speeches and which has now come to be seen as a call for action and educational reform to address major problems.

Our ideas are not presented as a finished argument but as a provocation to stimulate further thought, research and development. We draw here on Ball (2006, p.1) and his understanding of writing as an "interpretational foray into the dynamic complexities of high modern society"; in this case with a focus on the university. In the paper we reflect on our own institutional experience and explore the value of paradoxical thinking as a way of "stepping back from simple certainties" and

“holding onto ambivalence” (Ball, 2006, p. 7). We identify two key challenges facing those seeking to engage with sustainability in Higher Education (HE) contexts, namely:

- (1) How to develop authentic sustainability responses within the context of existing higher education structures and processes
- (2) How to reconcile the demand for immediate action with the much more gradual processes of education.

We offer a framework which we call the ‘paradox model’ as a way for both universities and those who work and study within them, to think about possible responses to the global crisis. We see it as an emergent conceptual device or, more simply ‘a set of possibilities for thinking with.’ (Ball, 2006, p.1) and we draw on our own experience as academics working in a UK university to illustrate how it can be applied in practice. Finally, we explore the potential of wisdom as a guiding principle for action; as a way of navigating the paradoxes of sustainability in higher education.

### **Paradoxical thinking**

The value of paradoxical thinking can be traced back to Greek philosophy and its literal translation as being ‘against opinion’ hints at its potential in illuminating new perspectives and opening up possibilities. Although, there are multiple definitions and applications of paradoxes, they all share the concept of apparent or genuine contradiction (Bufford, 2006). It is this idea of contradiction that resonates with our own experience of leading sustainability within the context of a UK university. Over the years our thinking has been regularly challenged by a variety of ‘critical incidents’ that have arisen from our practice and given us particular cause for reflection. One of these entailed a robust exchange about whether universities, and sustainability champions such as ourselves, were actually hindering rather than helping students to actively engage with sustainability. Another involved a heartfelt plea by colleagues from another institution to inject a sense of urgency into what they saw as rather complacent conference presentations lacking in criticality. The example of a colleague, with a background in campaigning, who invited multiple outside speakers to contribute to their course and established a range of extra-curricular activities, provided further inspiration. These examples and demands for action troubled us as they seemed to call into question our own understanding of education as an extended and uncertain process. And our position within the university structures alerted us to the difficulties of achieving systemic change in the ‘messy and contested space’ that characterises Higher Education (Haddock-Fraser *et al.* 2018, p.1).

To reflect on the critical incidents cited above, we turned to diverse theoretical sources and started to construct a ‘tool box’ of ideas and concepts to develop our thinking about the responsibility of

universities in the context of global crisis. Sterling's ideas about systemic thinking and paradigm change (2001) and his plea for 'anticipative learning' (2019) provided key concepts which we built on in different ways. Bottery's (2016) deep understanding of the complexities of sustainability leadership and Biesta's (2013, 2015) philosophical reflections on the purpose(s) of education helped us to stand back from our immediate concerns about content. The notion of the ecological university (Barnett 2018) furnished us with an additional vision to which to aspire. Drawing on these and other sources helped us not only to clarify our thinking but to identify the two key tensions facing those seeking to engage with sustainability in higher education contexts both of which have a genuine contradiction at their heart (1) the resistance-alignment paradox and (2) the fast-slow paradox.

### *The resistance-alignment paradox*

The resistance-alignment paradox refers to the extent to which sustainability education in all its various manifestations can be authentically developed within existing institutional structures. As argued earlier, neoliberal discourses are increasingly permeating the structures of higher education institutions and driving their educational processes and practices. This is leading to a growing recognition that incremental sustainability-focused activities may not be enough but rather 'a transformation is needed in how universities operate' (Sustainable Development Solutions Network, 2020, p. viii) because the scale of change needed is 'enormous and urgent'. This creates a challenge for those working in sustainability education about how to bring about this change. This challenge is articulated theoretically by Biesta in notions such as the 'duty to resist' (2015) and 'obstinate education' (2019) as well as in Courtney's (2017) concept of agentic dissonance. The common idea is that educators might need to actively engage with current structures to enable them to stay in the field of action – in this case the university. However, they also need to find ways to resist or challenge current processes and structures. There is a growing understanding that educators may need to actively and purposefully move between positions of alignment and resistance to balance the demand for efficiency and effectiveness with their 'moral purpose' (Courtney, 2017; Connolly *et al*, 2018). Ball (2003, p.223) argues that in contemporary education, 'beliefs are no longer important – it is output that counts. Beliefs are part of an older, increasingly displaced discourse.' The new discourse privileges 'corporatist' values of efficiency and performance which educators may find hard to reconcile with strong, explicit 'welfarist' values. Courtney (2017) suggests rather than being in a permanent state of resistance (attempting to force conditions back) or passively aligning, it may be possible to actively take a dissenting position. The dissenting identity aligns with 'what is necessary' whilst resisting where possible.

### *The fast-slow paradox*

The fast-slow or temporal paradox relates to the educational challenge of responding to an emergency or crisis situation. This requires an understanding of the purpose of education and here we draw particularly on Biesta (2013) and his conception of the education as

*“the slow way, the difficult way, the frustrating way, and we might say, the weak way, as the outcome of this process can neither be guaranteed nor secured” (p.3).*

Biesta’s conception acknowledges that the educational act is neither predictable, nor unequivocally causal and his description of education as ‘weak’ contrasts with neo-liberal assumptions of ‘strong’ cause and effect. It is certainly our experience that sustainability education is often viewed as a linear process involving the transmission of knowledge about sustainability issues. This involves focusing on inputs (content) and outcomes (attributes/behaviours) based on the belief that there is a linear and causal relationship between the two. Biesta rejects such simplistic thinking and argues that education is a multidimensional process with different domains which need to be kept in balance. While education includes the transfer of knowledge and recognises the value of ‘qualification’, it also promotes ‘socialization’ and what he terms ‘subjectification’ – that is opportunities for learners to engage with the world and to understand their place within it. This means that education is necessarily a lengthy process that involves interruption and challenge.

If some types of learning take time, there are nevertheless opportunities for fast responses. In their capacity as civic institutions, universities are repositories of knowledge and understanding which can be rapidly applied to specific situations and circumstances for the public good. Fast responses may take the form of advocacy or activism and involve alliances between universities, staff and students, the local community and community organisations. Such activities highlight the importance of collaborative links between universities and civil society, as Goddard and Kempton (2016) have pointed out. We believe that meaningful engagement with the contemporary crisis may require both fast and slow dimensions – slow responses that focus on learning and fast responses where expert knowledge is brought to bear on a particular issue or event.

### **The paradox model**

The conceptual framework that we offer here can be expressed diagrammatically in a model that brings these two paradoxes together to create four quadrants (figure 1).



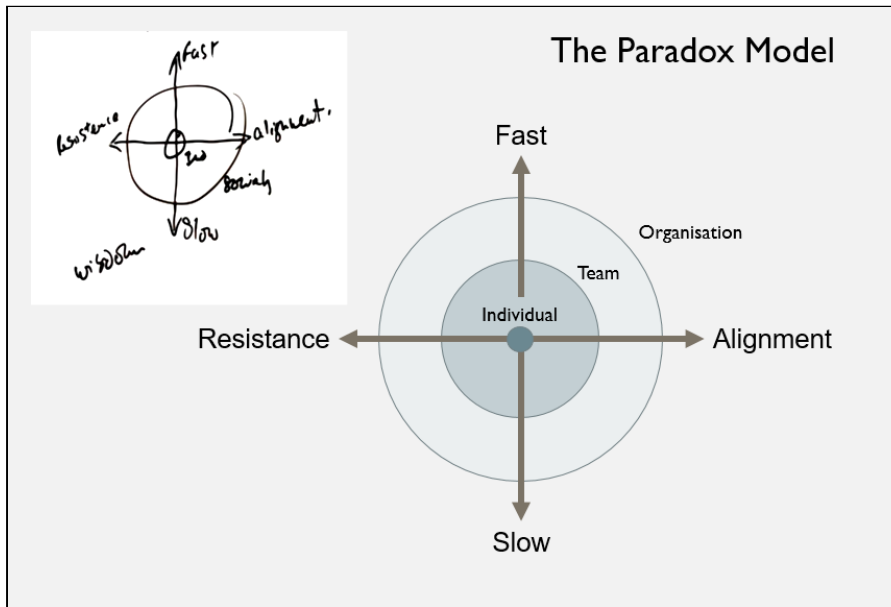


Figure 1 The paradox model provides a navigational tool for sustainability education.

This opens up thinking about the validity (and necessity) of alternative responses which may run alongside each other and which may sometimes appear contradictory. We have called our model the 'paradox model' for this reason. The paradox model can be applied at a range of scales from the individual to the institutional. It provides a lens that operates from an individual level, as in the case of a single tutor or student who becomes inspired with sustainability education, to an institutional level where a university may adopt sustainability in its strategic plan or mission statement as an over-arching commitment. Our experience suggests there is unlikely to be a single best response to sustainability education – indeed a diversity of responses would be entirely consistent with the ecological principles of diversity and resilience. The flexibility of focus from individual level to teams, programmes, faculties and entire institutions acknowledges the interconnections between different parts of a university. As Lowell (2016) explains, these connections develop in an evolutionary manner and can operate in unpredictable ways. The paradox model provides a framework that brings different sustainability initiatives together, giving coherence to what might otherwise appear inchoate. And just as different elements combine in ever-changing ways to create patterns in a kaleidoscope, the model incorporates dynamic change as part of an endless process.

### The paradox model in practice

Given its nature, it is not surprising that sustainability education in many universities (including our own) is chiefly located in the ‘slow-aligned’ quadrant of the paradox model. In this quadrant, existing processes and drivers such as student satisfaction ratings may be harnessed to build sustainability content into the curriculum. It is certainly the case that the familiar neo-liberal educational tools of measurement, standardisation and accountability are increasingly being used in the UK to account for sustainability outputs through initiatives such as *People and Planet University League* and *Times Higher Education Impact Rankings*. Such approaches which focus on outputs have been widely critiqued as a ‘tyranny of numbers’ by Ball (2015, p.299), a ‘fetishisation’ (Bainbridge, Gaitanidis & Chapman Houl, 2018) and a ‘hegemony’ (Collet-Sabe, 2017, p.143) and they arguably confine sustainability education within the existing boundaries of neo-liberal discourse. We see the paradox model as a way of re-balancing the current focus on reductionism and compliance and reinvigorating the potential of sustainability education. Rather than favouring one approach or a specific type of initiative, the model embraces diversity and creativity. Focusing on hope and positive visions for the future is an important element of sustainability education and the multiple approaches and entry points that nurture engagement (Hicks, 2014). The model also suggests that responses need to be ‘exquisitely sensitive to context’ (Leithwood *et al*, 1999, p.4 cited in Bottery, 2016, p. viii). This chimes with Barnett’s concept of the ecological university in which each institution has ‘a responsibility to work out its own possibilities’ (2018, p.9).

We present examples of change practice that relate to each quadrant in Figure 2. These are drawn from our own institution but are not offered as examples of good or best practice but rather to illustrate the potential characteristics of each quadrant. Each of the examples given makes an important contribution to the same goal albeit in different ways emphasising the importance of diverse approaches. By presenting co-existing examples from a single university, a possible resolution to the paradoxes is offered. Put simply, we suggest that the demand for urgent action might necessitate slow responses, so rather than being in tension, or contradiction, the relationship could be symbiotic. This thinking could also be applied to the resistance/alignment axis. Interestingly, there are similarities here with the Sustainable Development Solutions Network (2020) to university transformation. This recognises the need for universities to continue with day to day activities or ‘business as usual’ but proposes the development of a second ‘operating system’ within existing structures. The aim of this alternative system is to develop inspirational processes and practices that can refresh and replace traditional structures over time.

<b>Fast Resistance</b>	<b>Fast Alignment</b>
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<p>A large outdoor exhibition, <i>Whole Earth?</i>, developed by photographer Mark Edwards to foster a sense of activism in institutions around the world, was displayed at the university in 2015. The exhibition contained a wide range of powerful visual images and drew on a famous protest song to frame its wider message. Communicating on an emotional as well as a cognitive level, the exhibition raised the profile of sustainability among staff and students. As one student explained, <i>“What’s good is that the exhibition doesn’t just show problems, it shows what my generation – and universities- can do to bring about real change. Now I’m going to campaign to make those changes...”</i></p>	<p>A staff development programme (the <i>Futures Initiative</i>), designed to build sustainability capacity amongst academic staff was established using university funding in 2012. Since then it has supported more than 100 different small-scale curriculum development projects across the university. As one Faculty Dean put it, it has resulted in <i>“a myriad of activity bubbling and building at ground level.”</i> The availability of pump-priming funds has enabled staff to initiate change quickly and effectively in their own teaching.</p>
<p><b>Slow Resistance</b></p> <p><i>Project 93</i> was set up to enhance critical engagement with sustainability and to encourage social activism amongst staff and students. In its first two years, over fifty collaborative events were held, ranging from lectures to discussion gatherings, from film screenings to interactive workshops, and from poetry readings to podcast projects, all on themes around sustainability and social justice. It is now being extended into the local community through collaboration with schools and community organisations.</p>	<p><b>Slow Alignment</b></p> <p>A generic self-assessment tool was devised to help programme directors assess their programmes against HEA/QAA criteria for ESD (environmental stewardship, social justice, ethics and well-being, global citizenship and futures thinking). This tool was then adapted for use in the Faculty of Health and Wellbeing in response to NHS and Public Health drivers of practice. The sustainability graduate outcomes identified by this initiative have since been used in all programmes within the Faculty and has resulted in the development of new curriculum content.</p>

Figure 2 Examples of change practice across the four quadrants of the paradox model in one university

### Discussion

Using the paradox model to reflect on our own institutional experience of engaging with sustainability has been insightful. Applying the model retrospectively has helped us to understand our dominant modes of response and some of the reasons for this. For example, it was hard to find examples of activities that fitted the ‘resistance’ quadrants even though our institution notionally embraces risk. More significantly, it has highlighted the fact that our university is a complex hierarchical institution with multiple and often contradictory agendas but that there are possibilities and spaces to act within. However, we acknowledge that care must be taken in interpreting the model to avoid the ‘precarious dualities’ Chawla (2002) associates with paradoxical thinking. This

means recognising the limitations of the quadrants as explanatory categories or as resolutions of tensions; in our case this would suggest avoiding the simple interpretation that resistance is better than alignment. Instead, we suggest that the real potential of the model is as a navigational tool to guide the future action of educators and educational leaders in Higher Education. Moreover, we suggest that it is the centre of the model where the x and y axes cross each other rather than the poles themselves which has special significance. This can be understood as a point of maximum contradiction or uncertainty and it is from this intersection that possibilities can be considered, and action taken. This then raises the question of how to navigate and how to discern which type of response might be most appropriate in any given context. We believe that the concept of wisdom may have the potential to serve as a guiding principle for applying the paradox model both institutionally and individually.

#### *Wisdom as a guiding principle*

Philosophers have focused on wisdom – the ability to make good judgements in complex situations - throughout human history (Mitchell *et al.*, 2017). Tracing the idea of wisdom back to the ancient Greeks helps to illuminate its meaning. Aristotle and his followers saw wisdom as a virtue which offered a way for individuals and communities to live well despite the uncertainties of human life. They distinguished between the cognitive aspect of wisdom which helps us to make sense of the world and its practical application in determining the right thing to do in difficult circumstances. They regarded both these aspects of wisdom as central to moral character which they contended was developed over time through reflection and reflective learning on experience. Significantly, the Greeks also recognised that wisdom was particularly important for ‘those responsible for making decisions about the common good and the welfare of the citizens under their leadership’ (Baltes and Smith, 2008, p. 57). The idea of the university as a civic institution with a responsibility to act for the benefit of society gives the concept of wisdom considerable traction.

It is important to note that wisdom is a pluralistic concept – in other words there are many versions of the ‘good life’. This suggests that rather than being utopian, wisdom can act as an inclusive navigational tool. Given the current environmental emergency, it is arguable that the search for the ‘good life’ must now include Raworth’s challenge of finding a ‘just and safe space for humanity.’ There are also, we believe, strong connections here with Barnett’s concept of the ecological university as a feasible utopia which acknowledges the importance of the journey as well as the destination. This moves us away from seeking a ‘right’ response towards one which is ‘good enough.’ The need for a navigational tool becomes particularly apparent with respect to complex and

ill-defined problems. These ‘wicked problems’, as Bottery (2016) contends, demand a provisional rather than a definitive approach to decision-making. We believe that the concept of wisdom may offer helpful insights about what such decisions might look like in practice in a Higher Education context. Recently researchers have sought to understand wisdom from an empirical perspective, and although there are differences in emphasis and understanding within the literature, there is also a high degree of commonality. A key reference point is Clayton & Birren’s (1980) seminal study which examined the beliefs and implicit theories that people hold about the nature of wisdom. They concluded that it involves integrating three different components: (a) cognitive (knowledge and reason), (b) affective (emotion and empathy) and (c) reflective (self-understanding). Subsequent research undertaken Ardel (2004), Gluck and Bluck (2011) and Webster *et al* (2014) have all lent weight to an integrative understanding of wisdom as ‘an alloy of strengths’ in these three domains, each of which reinforces the other (Rauch, 2018). This suggests that wise decision-making draws on a number of sources which Baltes and Smith identify as a ‘combination of education, practice, apprenticeship, personal experience, and deliberate reflection about life matters’ (2008, p.57).

When applied to the context of sustainability education, the sense of wisdom as an active concept is particularly emphasised. Sterling (2003), for example, refers to ‘systemic wisdom’ as a concept that goes beyond ecological literacy and includes cognition, perceptions, emotions and taking responsibility for action. Similarly, Lander (2017) recognises the relevance of wisdom to sustainability education and notes the ‘significant overlap in cognitive processes and ethical understandings’ (p48). Her model of wisdom includes four dimensions: knowledge, thinking, ethical reasoning and action for social good. Thus, although these understandings include the cognitive, affective and reflective dimensions recognised within traditional definitions of wisdom, they also foreground the requirement to act.

Our contribution to this developing discussion about the potential of wisdom is drawn from our reading of Biesta (2015) and his multidimensional understanding of educational purpose. Whilst this includes the transfer of knowledge and understanding and recognizes the value of ‘qualification’, it also promotes socialization and what Biesta terms ‘subjectification’ – that is opportunities to engage with the world, to understand one’s place in it and to take responsibility for one’s actions. It is this concept of subjectification that is particularly pertinent to this discussion. Biesta suggests it can be understood as learning to live in the world in a ‘grown-up’ way. Here, he does not mean developmentally grown-up or biologically mature, rather he suggests it involves movement from an ego-centred position to one which fully considers the responsibility that we have to others and the

wider world. This is expressed neatly in the question *'is what I desire desirable for my own life, for others and for the life we all lead on a vulnerable planet?'* Returning to the paradox model and how wisdom could be used as a guiding navigational principle, we suggest that this question offers an apt starting point. We suggest it is an example of a 'wise' question as it demands cognitive, affective and reflective responses. It is most appropriately posed at the x and y intersection which we have already established is the point of maximum tension and uncertainty and should be the starting point for any decision-making. This allows consideration of possible action across all four quadrants and can be undertaken at an individual, team or institution level.

## **Conclusion**

Over the past few decades, universities have been faced with two key challenges as they seek to develop meaningful responses to the growing environmental crisis. The first of these relates to how they can exercise an authentic leadership role as the environmental emergency has grown ever more apparent. There are increasing concerns that whilst nominally acknowledging the significance of sustainability, universities themselves remain fundamentally unchanged. Indeed, sustainability education in higher education has adopted many of the neoliberal educational tools that mainstream educational researchers reject. This raises questions about the purpose and moral responsibility of higher education in the 21<sup>st</sup> century and what a sustainable university should look like. A second tension relates to the potential of education, a slow and unpredictable process, to contribute to the urgent crisis. The scale of the challenge and the speed of change required raises questions about the role of education in this change process. The way that the covid-19 pandemic has revealed a surprising flexibility and adaptability within the HE sector opens up new possibilities for educational responses to the environmental crisis.

The paradox model we have presented in this paper offers a conceptual framework which explicitly recognises these tensions and possibilities. In particular it,

1. Raises questions about how leadership for sustainability in higher education relates to the alignment-resistance paradox. We suggest that leaders in HE may need to inhabit the challenging space between resistance and alignment and develop a dissenting identity.
2. Highlights how the call for educational reform resonates with fast-slow axis of the paradox model. Reform can be incremental, but it can also be radical.

The point on the diagram where the x and y axes cross is a place of 'essential uncertainty' (Bolton, 2014, p.5) and discomfort. However, we argue it is the point from which both individuals and educational institutions should start from as they seek to develop appropriate responses to

sustainability challenges. We argue that wisdom is a key principle that can guide decision-making and help us to discern which type of response might be most appropriate within a given situation and offer an example of a 'wise' question that can be applied to the model. Rather than focusing on concepts such as sustainability literacy or attributes (based on neoliberal educational principles), our contention is that a more appropriate question for universities might be how to cultivate wisdom within its community of staff and students. Furthermore, although wisdom is understood as situated within the individual, we suggest that this question could also be asked at a collective (and even institutional) level by simply replacing the 'I' with 'we.' Whilst the sense of urgency intuitively calls for decisive evidence-based action, wisdom reminds us to reflect. We offer the paradox model as an original tool for reflection that can be used by individuals, groups and indeed whole educational establishments in evaluating past actions and future projects in relation to sustainability education. It comes from praxis and speaks to praxis. Its framework is open enough to be relevant to almost any global educational setting, yet sufficiently pointed to be of use.

Using the provocation of the paradox model, this paper highlights the potential for higher education in meeting the challenge of the global emergency. It is a celebration of diversity, creativity and possibilities at a time when such qualities are desperately needed.

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