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The Ecological Root Metaphor for Higher Education: Searching for Evidence of Conceptual Emergence within University Education Strategies

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Abstract: Recent research has suggested that Higher Education would benefit from the adoption of institutional models that relinquish ties to industrial thinking and associated metaphors. This long-established, market-led managerial perspective has been colonised by neoliberal values that work against education. A move towards models that have greater resonance with ecological thinking is considered to better align the institutional purpose with tackling the wicked problems of the current century and promoting social justice. This paper considers the role of root metaphors in promoting and maintaining an ecological perspective and asks if there is any evidence for the emergence of ecological thinking in institutional education strategies that might support the development of the *imagined future* of the ecological university. Qualitative document analysis suggests that the move towards the adoption of the ecological root metaphor will require a punctuated change that is not compatible with the typical incremental nature of change within universities. The incremental adoption of ecological terminology may trigger an increase in pedagogic frailty if the root metaphor remains linked to the neoliberal ideology of consumerism. The construction of strategy documents needs to consider how key concepts are related to each other and how they can portray a coherent image of the institution's ambitions.

Keywords: basin of attraction; ecology; neoliberalism; resilience; social justice; sustainability

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1. Introduction: Research Motivations

My motivation for this research stems from my role in supporting the professional development of university teachers over the past two decades. My direct observations of the impact of a deepening managerial culture on colleagues' well-being has encouraged me to question the neoliberal values that dominate Higher Educational discourses and to consider how we might develop a more socially just, caring environment. The exploration of the potential of the ecological university that is emerging in the research literature (discussed below) appears to offer a more sustainable basis for Higher Education in the 21st Century. However, my question here is whether university strategies for teaching are helping to make this a reality, or do they act as an impediment to change? This is explored below through the examination of a sample of strategy documents from UK universities, with reference to a wide range of sources from the educational research and ecological research literatures. In doing this, I hope to expose the metaphors that underpin the dominant discourse and to suggest some conceptual tools to support a more ecological gaze on university teaching.

2. The Use of Metaphor in Education

The use of metaphors is widespread in education discourse, where they are seen as a way of creating novel understanding by encouraging interaction between metaphorical and literal meanings. They have intellectual and emotional functions, allowing us to understand and imagine in ways that a purely literal meaning cannot, and assist with the

appreciation of complex ideas that are otherwise difficult to conceptualise [1]. However, the result of a ubiquitous use of metaphor is that we can become oblivious to their occurrence and can be unaware that our views and beliefs are being framed by organisational actors through the subtle use of metaphors to shape our perceptions of particular events and circumstances [2]. Metaphors can also exert a negative impact by excluding categories of meaning from discussion via reliance on particular metaphors to the exclusion of others [3]. In the context of Higher Education, the market-driven neoliberal perspective [4] promoted by the government has relied upon the application of an industrial metaphor that has employed the language of production efficiency and standardised outputs that serves the needs of economic globalisation and fosters an epistemological monoculture by blocking out counternarratives [5]. This maintains the deep structure of the institution so that radical change is prevented, and institutions are limited to change by 'disjointed incrementalism', a way of ensuring the 'dynamic conservation' of the existing system [6,7].

The key idea to explore here is that of the 'root metaphor'; that is, taken-for-granted cultural assumptions that are encoded into the language of the institution, which allow for the conceptualisation of certain relationships while hiding others [5]. From the root metaphor, other metaphors emerge that build upon and cement into place a particular set of cultural assumptions, to the degree that alternative perspectives will appear as unhelpful distractions. This is the case in Higher Education, where the industrial root metaphor has effectively extinguished alternative perspectives to create a narrative monoculture. Within the neoliberal university, counternarratives are not recognised as adding to the cultural diversity or promoting systemic health, but rather as a disruption to the perceived linearity of progress. Managerial language is pervasive in Higher Education and has formed a coherent web of concepts to bind together the elements of the neoliberal university through ideas of accountability and performativity. In ecological terms, this web of concepts operates as a 'basin of attraction'—a set of states that tend to converge on a single attractor (e.g., consumerism), maintaining the dominance of that attractor so that it appears to become self-sustaining, and where any alternative attractors are obscured or seen as unattainable. There is extensive literature on the managerial culture that has become the dominant ideology within Higher Education [8] and the damage it is doing to the health and wellbeing of staff and to organisational vibrancy [9,10]. As summarised by do Mar Pereira [11]:

> It is no longer a (thinly veiled) secret that in contemporary universities many scholars, both junior and senior, are struggling—struggling to manage their workloads; struggling to keep up with insistent institutional demands to produce more, better and faster; struggling to reconcile professional demands with family responsibilities and personal interests; and struggling to maintain their physical and psychological health and emotional wellbeing. (p. 100)

However, within the neoliberal university, there are suggestions of change that signify a gradual appreciation of a more humane perspective in Higher Education, where concepts such as 'care', 'sustainability', and 'resilience' are seen as components of a healthy educational environment [12]. While there is an increased awareness of ecological perspectives within education and a wider adoption of ecological terms within university policy discourse, we need to ask what happens when contemporary, emancipatory terminology is framed by an entrenched industrial root metaphor, and whether the application of the 'wrong' root metaphor results in terms being misused or misinterpreted, or socialised into an 'eco-management' perspective that subverts the ecological ideal by maintaining a focus on consumerism—the economic imperative to acquire goods to support the notion of indefinite economic growth [13]. For example, the concepts of sustainability and resilience are now terms that are in the public consciousness and have become co-opted into the Higher Education discourse [14,15], but:

> When there are competing root metaphors, such as between 'ecology' and the collection of root metaphors underlying the Industrial Revolution, iconic metaphors

such as 'sustainability' have different meanings that reflect the differences in taken-for-granted root metaphors. [5] (p. 23)

When used within the industrial frame (Figure 1), the use of 'sustainability' is linked reductively to production imperatives, such as sustainable growth. However, an alternative discourse is starting to emerge within the research literature to disrupt the link between sustainability and growth with a discussion of a 'pedagogy of degrowth' [16]. The perspective of degrowth aims to decolonise the dominant imaginary [17] with a counternarrative to challenge the hegemonic idea that economic growth on its own should be the primary driving force of society, promoting the view that we should rather emphasise the wellbeing of societies and aim towards greater social justice. The concept of degrowth and the pedagogy derived from it is starting to gain traction in the wider literature, e.g., [18,19], but has yet to break through to the Higher Education policy literature. Alongside resilience and sustainability, I would also add the concept of 'care' as an idea that is gaining momentum within university discourses [20], that complements an ecological view of pedagogy for social justice. However, when placed within the neoliberal frame, care can be seen as part of the 'politics of repair' within a deficit culture [21], where care is only an issue when there is a problem, and productive capacity of the machinery of education is seen to be working at less than 100% efficiency.

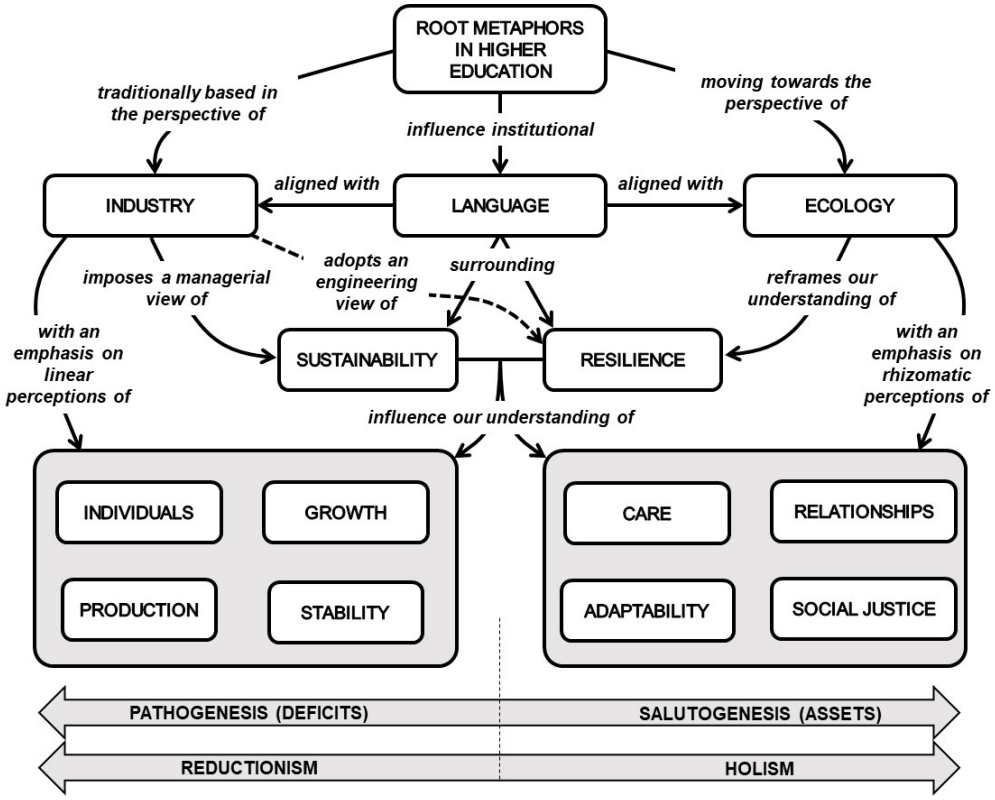

Figure 1. A concept map to show how the language of a root metaphor can influence the meaning of the key concepts of 'sustainability' and 'resilience'.

3. The Ecological University Model

To counter the perceived failure of neoliberal discourses to steer Higher Education through the complex issues that dominate university life, and society more generally, the idea of the ecological university has started to make an impact within the research literature [22–24]. This is not just to foreground the importance of 'the environment' (for example, by encouraging energy efficiency or recycling on campuses), but to rethink the idea of the university and its contribution to society. Clarity about the scope of ecological thinking is offered by Code [25] (p. 5):

> Ecological thinking is not simply thinking about ecology or about "the environment", although these figure as catalysts among its issues. It is a revisioned mode of engagement with knowledge, subjectivity, politics, ethics, science, citizenship, and agency that pervades and reconfigures theory and practice. It does not reduce to a set of rules or methods; it may play out differently from location to location; but it is sufficiently coherent to be interpreted and enacted across widely diverse situations.

The model of the ecological university [24] centres around the concept of the ecosystem (Figure 2). The central role of human actors in the educational ecosystem is described by Neimi [26] (p. 9):

> In contrast to a biological system, an educational ecosystem needs human actors, and it is dependent upon conscious human behaviour. For an educational ecosystem to be sustainable, its participants must intentionally share joint aims and take action to ensure interconnectedness, interdependence, and open and transparent mutual communication between all partners. In complex and moving systems, many of the components undergo their own change processes, and this information needs to be analysed, updated and shared when working towards common goals.

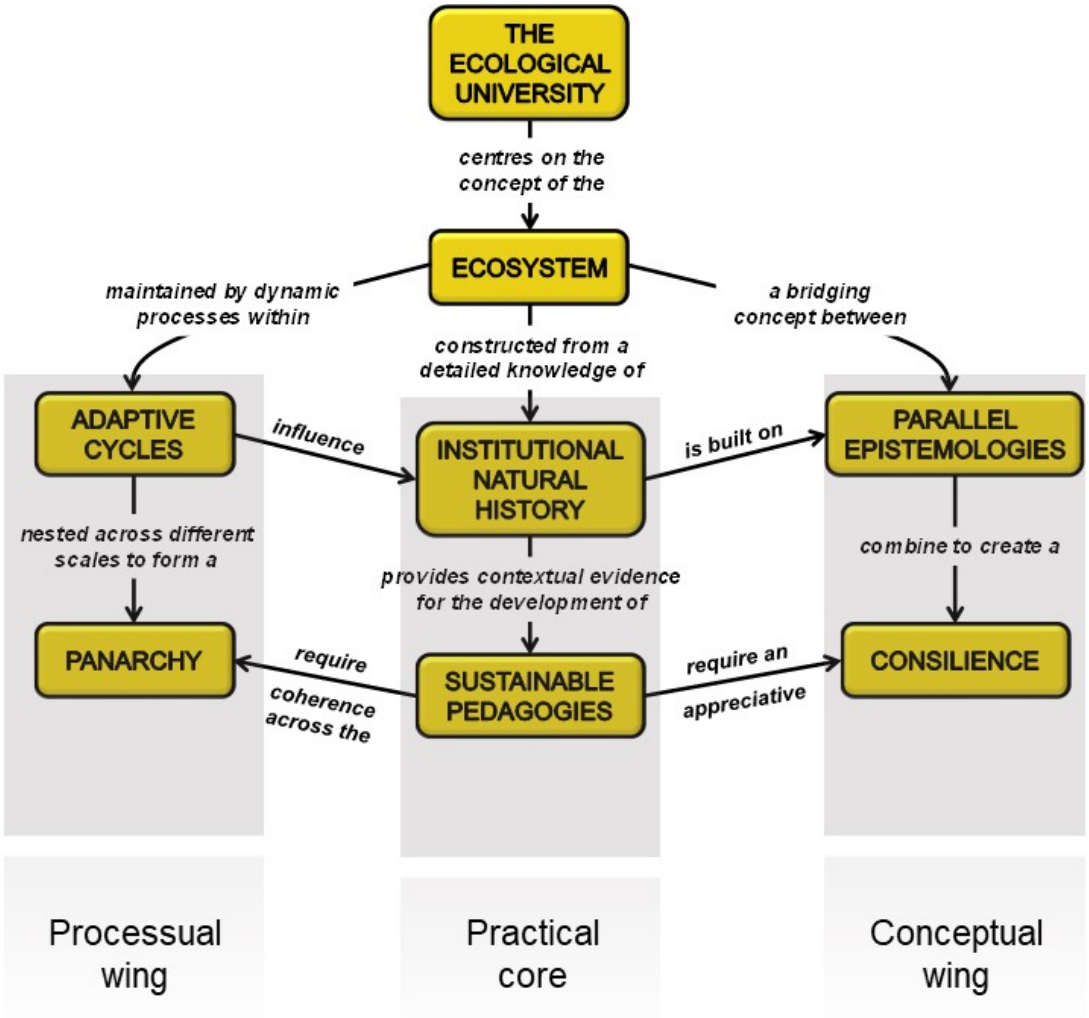

Figure 2. The model of the ecological university, modified from Kinchin [24].

From the theoretical underpinning of this model (Figure 2), we can start to work out what needs to be done to move universities away from the 19th Century industrial model of

education, with its root metaphors of progress, anthropocentrism, and subjectively centred individualism [5]:

> The use of ecology as a root metaphor foregrounds the relational and interdependent nature of our existence as cultural and biological beings [it] foregrounds relationships, continuities, non-linear patterns of change, and a basic design principle of Nature that favors diversity. (p. 29)

Various scholars have drawn links between ecological concepts and the concept of social justice, considering the ways in which these combine to address inequalities in educational systems [27], with injustices in the system conceptualised as socio-ecological problems [28]. Increasing social justice within Higher Education requires a greater parity of participation and full epistemic access, in which students can access powerful knowledge in partnership with other 'knowers', inside and outside the academy [29]. In their analysis, Furman & Gruenewald [30] have integrated the social justice discourse with the ecological narrative to develop an expanded concept of 'socioecological justice'. In doing so, they acknowledge the crucial interdependence of social and ecological systems. Increasing social justice is therefore embedded within the task of moving towards an ecological university.

Therefore, in this paper, I wish to examine how the key concepts needed to construct the imagined future of the ecological university might be emerging within the strategy discourse that guides the Higher Education reform agenda towards greater socio-ecological justice.

4. Institutional Education Strategies

The historical and political context that gave rise to the development of university education strategies in the UK in the 1990s has been described in detail by Gibbs et al. [31]. Overtly, the creation of these strategy documents was originally intended to increase the priority placed by institutions on teaching quality; to promote the professional development of teachers, and to increase the public confidence in the quality of teaching delivered within universities at a time when the sector was expanding from an elite system to a mass system of Higher Education. In practice, these strategies have often become a vehicle to push consumerist agendas in Higher Education, and the development of education strategies has run parallel to changes in university funding and the increased governmental emphasis on ranking and value for money that have distorted the original aims. Nonetheless, education strategies are still viewed as a way of furthering a teaching agenda that may be beneficial to the student experience at university, and to the appreciation of disciplinary and teaching expertise among the staff. They are also viewed by managers as a way of advertising institutional distinctiveness in an increasingly competitive and marketised sector. In essence, 'Learning and teaching strategies operate at institutional level in publicly defining the institution's approach and in driving reform internally.' [32] (p. 117).

While these documents provide a summary of the institutional policy, it is not always clear how closely policy relates to practice on the ground. For example, 'when questioned about if and how they used the existing document, the majority of respondents reported that they only actually looked at it in order to comply when preparing other documentation' [32] (p. 127). This suggests that there may be an ecosystem of strategy documentation that sits in parallel with the ecosystem of practice, and that the two rarely impinge upon each other. In addition, the institutional education strategy is only one element of a patchwork of strategies that cover a wide range of issues including research, widening participation, data security, estates management, etc. Unless there is a clear approach to aligning these strategies, there is a good chance that some of the documents will be working against each other. Clegg and Smith [32] point out that, 'It cannot be assumed that learning and teaching strategies are necessarily aligned with other strategic foci in the institution—for example, the highly selective approach to research assessment puts pressures on researchers to concentrate on research at the expense of teaching' (p. 118). The existence of separate frameworks for assessing teaching excellence (TEF) and research excellence (REF) may undermine the potential synergies and relationships between teaching and research. Such

compartmentalisation may also encourage the creation of teaching and research silos within institutions and impede the development of integrated teaching–research ecosystems.

5. Method

Institutional education strategies were identified by conducting a Google search in March of 2022 (see Appendix A), as these are all publicly available documents, and this replicates the authentic search actions of the intended readership. The search terms were, 'Education, Strategy, UK, University'. Institutions were excluded from the sample where the strategy document had expired or where there was no portable document file to export from the university's website. The first twenty institutional strategies to be identified using these criteria comprised the sample to inform this paper (Table 1).

Table 1. Institutional strategies included in the sample.

Institution	Title	Range	Page Length
Aston	Education strategy	2021–2025	2
Bath Spa	Education strategy	to 2030	1
Bristol	Education strategy	2017–23	9
Cardiff	Education and students	2018–2023	5
Durham	University strategy	2017–2027	32
Edinburgh	Learning and teaching strategy	to 2030	7
Essex	Education strategy	2019–25	11
Exeter	Education strategy	2019–2025	16
Glasgow	Learning and teaching strategy	2021–2025	9
Huddersfield	Teaching and learning strategy	2018–2025	2
Imperial	Learning and teaching strategy	Undated document	42
KCL	Education strategy	2017–2022	30
Lancaster	Education strategy	from 2020	7
Manchester Metropolitan	Education strategy	to 2030	39
Nottingham	Strategic delivery plan for education and student experience	2021 onwards	12
Oxford Brooks	University strategy	2020–2035	38
Plymouth	Education and student experience strategy	2018–2023	5
Queen's	Strategy	to 2030	11
St. Andrews	Education strategy	2020–2025	3
Westminster	Education strategy	2021–23	8

These documents vary in length from 1–42 pages, and strategies vary in duration from 3–16 years, so that some strategies have a shorter life than some of the degree programmes they relate to. It is clear that the intended audience for these documents varies from one institution to another, with some of the strategies presented in the format of committee minutes, seemingly for the purposes of audit, while others are presented as glossy brochures, clearly intended for consumption by an outside audience.

The majority of the documents in the sample are given the title, 'Education Strategy' while a few institutions have opted for the older designation of 'Learning and Teaching' (sometimes 'Teaching and Learning') strategies. Some institutions have also added the idea of student experience to the strategy title. These documents combine to provide the corpus of text that has been scrutinised through a recursive process of reading, interpretation, and re-reading, from which a number of observations can be made. The pros and cons of document analysis as a method have been discussed by Bowen [33]. The discussion of these documents offered below is constructed through an iterative process of 'zooming in' on certain elements of the text alongside an alternate 'zooming out' to acknowledge the wider context and the relevant research literature to construct a coherent narrative [34].

6. Observations

Reading these strategy documents highlights certain terms that appear over and over again across the corpus. The degree of overlap is not surprising, and may be indicative of a 'convergent evolution' of strategy documents, as they respond to shared environmental selection pressures within the UK Higher Education system. These key terms are highlighted below for discussion and set against the contemporary research literature to spotlight points of resonance.

6.1. Teaching and Pedagogy

Some of the longer strategy documents owe much of their page length to the inclusion of numerous decorative photographs of smiling students. These students are usually depicted in small groups, placed strategically at the most photogenic corners of the campus or sitting around a computer. Interestingly, they are almost never depicted sitting in large, crowded lecture theatres—as if the continued existence of lectures as cost-effective mechanisms to disseminate content are somehow the universities' guilty secret that need not be advertised.

However, it is clear that lectures and large-group teaching are still a mainstay of teaching provision in many universities. Observers of university teaching will also know that there is tremendous variation in the format and quality of lectures and there is an argument to abandon poorly designed, passive lectures—along with any other poorly designed teaching event. The style of the lecture is reflected by the pedagogy that underpins it. Lectures 'can be more than their lowest form' of passive transmission of content, and their function of 'providing structure, community and a sense of belonging is just as vital' as the sharing of knowledge [35] (p. 713). Lectures can be an effective teaching format in the modern university [36,37], and with the appropriate teaching strategies in place the large class can 'feel smaller' and motivate students. This pedagogic lens could be explored more by university managers who need to look beyond the potential economic benefits of large group teaching.

While the focus of these documents is on the teaching within the institutions, it is interesting to note how little discussion there is of the pedagogy that underpins this teaching. Clegg and Smith [32] refer to 'pedagogy' as a 'nasty word', as it removes talk about teaching from the ordinary world of conversation and the authors of strategy documents may feel that the use of the term makes the ideas less accessible to the potential readership. This probably explains why few strategy documents use the word very often. Where it is used, pedagogy is often conjoined with a generic modifier (such as 'innovative' or 'modern'), without giving any suggestion of a leaning towards any specific learning theory. Even more rare is the use of 'epistemology'—indeed, it does not figure at all within any of the documents within this sample, even though 'knowledge' is often referred to.

6.2. Knowledge

The linking of knowledge to the neoliberal lens (as a 'knowledge economy') sees it as a tool in the managerial armoury, in which knowledge is seen as an inert commodity that can be packaged and transferred without having any influence on the stakeholders involved. This affects the ways in which we conceptualise research, such that research outputs 'are being transformed into units of 'dead information' that flow through seemingly automatic global information systems, which rank and filter knowledge so as to uncritically reinforce the existing capitalist world by skewing the assessment of research outputs towards market impact criteria and capitalist goals of profitability' [38] (p. 18). The current commodification of knowledge is being challenged by some in an attempt to achieve greater social and intellectual inclusion through the free exchange of ideas [39].

The concept of 'ecologies of knowledges' challenges the current monocultural focus on scientific knowledge by instead locating scientific knowledge within a broader ecology of knowledge systems. In such an ecology, knowledge systems are accorded 'equality of opportunity' to build 'a more just and democratic society as well as one more balanced

in its relations with nature' [40] (p. 190). Hall and Tandon summarise the problem by explaining that:

> what is generally understood as knowledge in the universities of our world represents a very small proportion of the global treasury of knowledge. University knowledge systems in nearly every part of the world are derivations of the Western canon, the knowledge system created some 500 to 550 years ago in Europe by white male scientists. The contemporary university is often characterized as working with colonized knowledge, hence the increasing calls for the decolonization of our universities. The epistemologies of most peoples of the world, whether Indigenous, or excluded on the basis of race, gender or sexuality are missing. However, evidence of other epistemologies and other ways of representing knowledge exist. Without a much deeper analysis of whose knowledge, how that knowledge was gathered and how transformative change is encouraged through deeper attention to knowledge democracy, public engagement in knowledge sharing simply reinforces the existing colonized relations of knowledge power. [41] (p. 7)

If we respect indigenous or cultural knowledges as part of a broader ecology of knowledges [42,43] we open up potential to discuss the 'histories of knowledges' [44], and this creates the possibility of forming connections with different knowledge systems across the world. However, if we take a singular view of 'knowledge', it will concentrate our focus only on this side of the epistemological abyss [40], and so cannot be 'inclusive'. The key benefits of this focus on ecology and sustainability of knowledges have been helpfully synthesised by Burns:

> By drawing on the wisdom of ecological principles and indigenous worldviews, sustainability teaching and learning can be designed in a way that is focused on learners' whole selves, empowering learners to become citizens who know how to understand and address problems systemically and intellectually; know how to critically question dominant norms and to listen to a variety of less heard perspectives, engaging their emotions in this process; know how to work with others collaboratively, relationally, and physically in an active process of problem solving; and who know themselves and their places spiritually, who understand their interconnectedness with all life, and who can engage with the living world in a balanced and sustainable way. [43] (p. 272)

This seems to put the typical institutional perspective of knowledge at odds with the aims of inclusivity and globalisation. In their study of UK university vice-chancellors' perspectives on university strategies, Bosetti and Walker [45] gave considerable space to the discussion of knowledge, and in particular the commodification of knowledge in a knowledge economy. However, at no point in their discussion did they suggest that institutions have made any acknowledgement of the plurality of knowledges. The observations made from the strategy documents considered in this paper suggests that there may have been little change in this regard in the past decade. Knowledge is still seen as a singular object of commodification, and its mention is often tied to the 'knowledge economy' [46].

6.3. Technology

Clearly, the influence of digital technology on universities and on society at large cannot be overstated. Laptops, tablets, and smart phones are ubiquitous on university campuses, and it is right that the potential of these devices is explored in our teaching. However, within the strategy documents within the sample considered here, one might believe that the digital revolution has yet to happen and that digital devices are still a novelty. Digital technology is depicted in an almost universally positive light, with little discussion of any limitations or drawbacks to the use of technology in teaching as it might be perceived by students or teachers [47]. The documents seem to express excessive or

even 'hegemonic positivity', sensu Josefsson and Blomberg [48], that can impose theoretical blinders on scholars and managers. Overlooking the negative aspects of a phenomenon risks losing 'resonance with organizational life' (p. 4) and creating an unrealistic fantasy, or simply a marketing narrative.

Bradley [49] argues that 'it is insufficient to merely reproduce information but rather one has to create and curate knowledge' (p. 466), and notes that, 'Technology is intervening in the act of learning in a profound and historically unique way and leading to a crisis of formation, and the emergence of new forms of madness' (p. 469). Bradley concludes, 'My point was that it is valuable to use technology to guide students, but we cannot give students completely over to information as there has to be a corresponding act of curation and act of memory and remembrance to guide students towards greater intercultural or cross-cultural understanding' (p. 474). The teacher/curator of knowledge then has the job of guiding the student along a journey of knowledge, with knowledge always *becoming* rather than *being*. In the absence of the teacher—for example, in the context of individual and solitary learning that was experienced during COVID lockdowns, and where screens replaced the classroom experience—the active curation of knowledge by the teacher was absent and knowledge may be perceived by the student body as *being* rather than as *becoming*, with the result that rote learning reclaims its dominance over meaningful learning.

In addition, the strategy documents considered here could do more to consider how views of technology have and are changing in the field of education. For example, the language used in the strategies seemingly fails to acknowledge that the digital revolution has already occurred and that we are now working in a 'postdigital' environment [50], a concept that better describes the current era where the emergence of digital technology is rather old news and, in the context of pedagogy, the separation of the digital from the analogue is no longer helpful [51,52], with implications for 'learning' [53]. As such, many of the strategy documents appear to be 'behind the curve' in terms of contemporary thought, with the digital still viewed as 'a disembodied realm' [54], and any associated suggestion of innovative pedagogy to be rather outdated and reminiscent of the old 'technological cart and pedagogic horse' metaphor [55].

The domesticated application of educational technology [56] within the 'basin of attraction' created by the industrial metaphor provides an example of how increased adaptive capacity on its own is not enough to ensure development towards an ecological perspective. As summarised by Gilead and Dishon [57] (p. 828) where 'rigidity traps' or 'lock-ins' serve to encourage adaptability within a narrow perspective:

> furthering adaptability increases the possibility of lock-ins, namely, of cases in which better alternatives exist, but the system is trapped in a basin of attraction. This is due to the fact that adaptability enlarges and deepen the basins. For instance, it has been argued that the lecture has prevailed as the main form of educational delivery due to its capacity to adapt to technological developments while maintaining its overall structure. Thus, teachers have introduced new technological tools—PowerPoint slides, video clips, digital surveys—that were integrated into the lecture, rather than replacing it. While it could be the case that better alternatives exist, the lecture's adaptability allowed it to prevail. In this case, the introduction of new technologies served to enlarge the basins of attraction, that now encompassed new tools, but the attractors were kept stable. This seems to remain valid even in the wake of the COVID-19 pandemic and the transition to remote learning.

During the COVID pandemic, the application of Zoom has supported the teacher-centred model of lecturing in its migration to the online model while avoiding the more transformative redesign of instructional practices. Gilead and Dishon [57] emphasise that the development of a vision to guide our response to the post-pandemic era is essential to steer systems towards a desired objective and navigate towards a preferable attractor. This is not a 'fixed point' to work towards to provide a stable endpoint, but rather a broad

orientation that can guide a rhizomatic system. Within the ecological university, such an orientation might be provided by the concept of 'eco-social justice' [58].

6.4. Global Excellence

The adoption of 'excellence' as a frame for teaching quality has been described by Clegg [59] as an example of the 'discursive migration' of concepts from the world of business into Higher Education. Clegg considers the adoption of excellence to be an example of colonisation of an inappropriate terminology that is unhelpful in stimulating debate about the function of universities. Cooper considers the excellence discourse to simply offer a distraction to divert attention away from the university funding crisis and the erosion of academics' working conditions [60].

The idea of 'being global' is often linked to the notion of excellence, implying that excellence has to be in relation to the global marketplace for education rather than any local perception of excellence. Working within the neoliberal frame, the concept of 'the global university' can be deconstructed to create a negative perspective in which:

> The notion of the "global university" refers to the fact that more and more universities in more and more countries all seem to be playing the same game and therefore increasingly are trying to become the same and to a large extent already have become the same. [61] (p. 37)

The result of this convergence is a reduction in diversity across the Higher Education ecology that will ultimately lead to a decline in resilience [62]. This is exacerbated by confusion, for example, about the use of league tables that seem to have shifted from being indicators of quality, to becoming definitions of quality—so that it is now not uncommon to see obtaining a particular aspirational position in a league table as a strategic objective rather than as an outcome of practice [61]. As universities vie for places in league tables, there is a tendency for one institution to copy the others, so that their calls for distinctiveness all start to sound similar. The call for greater diversity among universities is therefore not, 'just a call for inclusion into existing cultures, structures and practices', but rather a call to change the system and for, 'the redistribution of power' [63] (p. 1).

The bullet lists of key terms and phrases that dominate many of the strategy documents emphasise a lack of explicit underpinning theory, and so, by failing to link the ideas, the intended meaning of many of these terms remain opaque. For example, 'knowledge', 'inclusive', 'global', 'digital', and 'curriculum' are five interlinked concepts whose intended meanings only become clear once the implicit links to other concepts and the root metaphor that guides them are articulated explicitly (Figure 3). Such linearity of presentation (underpinned, one assumes, by a parallel linearity of thought) represents only one segment of professional knowledge: the chains of practice [64], whilst ignoring the foundational theory—the networks of understanding. In other words, the strategy documents observed tend to depict their key messages in such a way as to 'hide their workings'—the theory and evidence that underpins them.

An unproblematic consideration of 'curriculum' ignores the implications of epistemicide that is discussed in the literature [65] and so brings the concept of 'curriculum' into tension with ideas such as inclusivity, and globalisation. It limits consideration of 'inclusivity' to 'this side of the abyss' (focusing on ways of thinking that are already dominant), and therefore sheds doubt on the institutional commitment to decolonisation and the inclusion of 'other' knowledges. The context for the application of policy is critical if we are to understand how practice may be influenced. Paraskeva [66] offers a clear articulation of the 'era of the absurd' that provides the wider context for the strategies described here and makes a strong case for an 'itinerant curriculum theory' [67] that reflects a nomadic philosophy of becoming. The move from the industrial root metaphor towards an ecological perspective requires a shift from an anti-contextual and reductionist epistemology concerned with objectivity and an externally verifiable 'truth', towards a perspective that accepts and appreciates complexity, contextual patterns of relationships, and multiple realities that reflect epistemological pluralism.

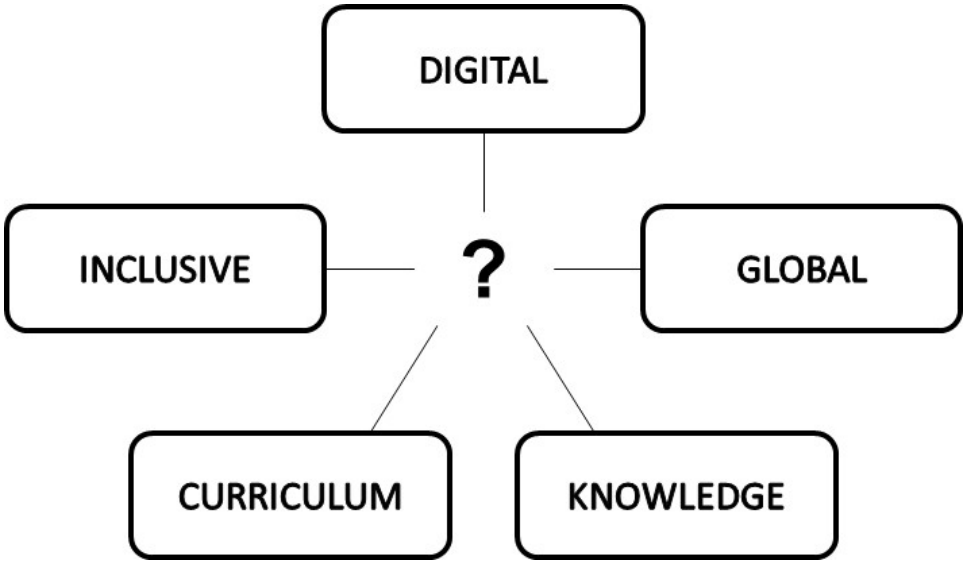

Figure 3. Five ubiquitous concepts that are universally listed within education strategies, but whose meanings remain unclear, in the absence of explicit linkage by a common central theme.

7. Conclusions

It is not my intention within this paper to separately rank or otherwise evaluate the individual strategy documents that inform this discussion, but rather to treat them as representative of a narrative genre that illustrates the dominant moves within the UK Higher Education sector as a whole. However, one particular observation is inescapable, notably that only a single strategy document explicitly draws upon an ecological metaphor to integrate the narrative that is presented by the institution. The strategy document from Exeter University is unique within this sample by invoking the ecosystem metaphor as a root metaphor to underpin the overall strategy. There is also additional evidence to be found in the literature of further work to consider the natural history of that university to provide an ongoing evidence base to support development [68].

The approach to institutional change described as 'disjointed incrementalism' [6] is not a helpful way forward for the development of the ecological university. The evolution of ideas does not always run in parallel to the gradual adoption of new terminology, especially where the underlying root metaphor does not support the anticipated change in meaning. This suggests that it will be unlikely that universities will be able to undertake incremental steps towards adopting an ecological root metaphor and explains why, in the sample of strategies observed here, institutions may be seen in binary terms as either based within an industrial root metaphor or, in the case of Exeter, an ecological root metaphor. This wholesale buy-in to a new way of conceptualising the university requires a coordinated application of the root metaphor across the layers of the institutional panarchy [24] to initiate a punctuated change [6,69]. The 'flip' from one attractor (consumerism) to another (ecology) requires a wholesale move from one basin of attraction to another. The documentation from Exeter suggests this is possible, though we have to assume (based only on the documentation noted rather than any observations of practice on the ground) that the strategy is influencing practice at the level of the individual academic.

If universities are to move beyond the development of short-lived strategies that only cater for the here and now, then as a precursor, they must embrace an underpinning philosophy that supports this. In particular, this requires the adoption of an eco-philosophy of *becoming* that can better reflect the inevitable change within the life journeys of their graduates and their parallel knowledge journeys [49]. This acceptance will allow the university to develop an education strategy that has a longer life expectancy. An ecosystemic perspective on *becoming* has evolutionary change built in, whereas a managerial focus on *being* will require frequent revision and repositioning of the strategy to reflect the oscilla-

tions of economic and political drivers that currently act as the vectors of change for Higher Education curricula [70].

Within an unstable environment (such as that experienced by Higher Education), the best way to cope with surprises is resilience—that is, development of a 'broad basin' of attraction for the socially preferred ecosystem state and the social flexibility to change and adapt whenever ecosystem stability is challenged in unexpected ways [71]. Such resilience is about learning from and developing with change, rather than managing against change [62]. However, engineering resilience can work to maintain an unfavourable system—an 'ecology of bad ideas' [72]. Therefore, in promoting resilience as a strategic aim, universities need to be clear whether the resilience under discussion is 'engineering resilience' or 'ecological resilience', as these represent opposing world views [73]. Engineering resilience offers a measure of local stability that aligns with the managerial tendency to 'dampen down' fluctuations in the system—a risk-averse stance aimed at maintaining the status quo within the institution [7]. Ecological resilience recognises that the system may not return to its current equilibrium, but may 'flip' to another state (Figure 4).

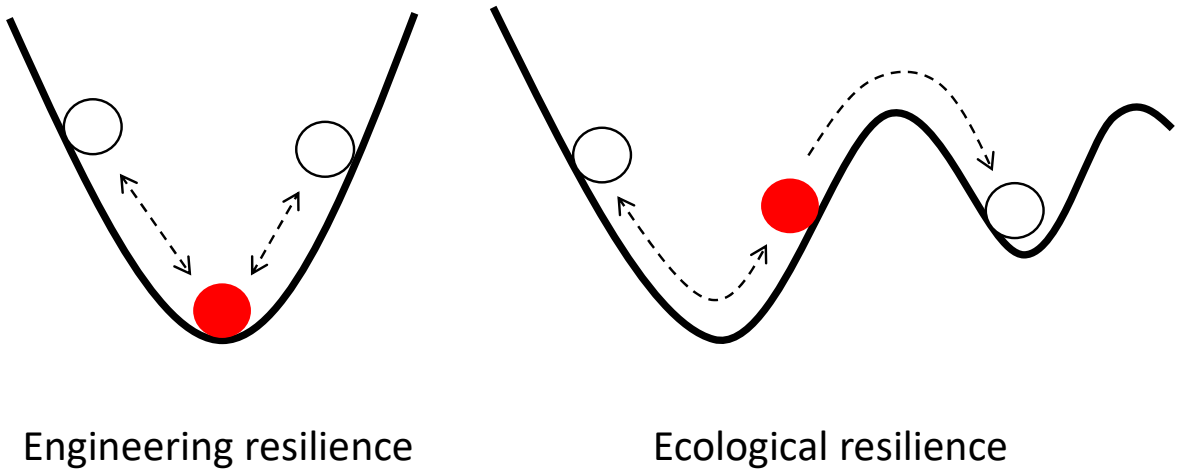

Figure 4. The difference between engineering resilience and ecological resilience is often depicted using a cup-and-ball heuristic. The cup represents a particular state or 'basin of attraction' in which the system tends to remain. The ball represents the state of the system at any given time. Engineering resilience assumes that there is only one possible regime, represented by a single basin of attraction in which the optimal condition is stability. Ecological resilience accepts that there are multiple possible regimes, that the system is never at rest, and that it may flip into another basin of attraction.

This presents a challenge for institutional management teams, who may have spent their time promoting policies that deepen the 'neoliberal basin of attraction'. Trapped within this worldview, the process of adaptation merely helps academics to cope within the current situation and to perpetuate the dominant system in operation [57], even when commentators have been so deeply critical of it [46]. In order to break free of the neoliberal basin of attraction, it is necessary to offer a vision of a desirable future that people can relate to. Application of an ecological root metaphor can provide a lens through which to observe such a possibility and trigger a flip to an alternative basin of attraction (Figure 4). The job of senior management is, therefore, to create the conditions for this transformation to succeed.

Ultimately, we need to be sceptical of university strategy documents that use ecological terminology within a neoliberal frame. Terms such as 'sustainability' and 'resilience' can be co-opted or domesticated for use within a such a frame, but their meanings will be obscured or corrupted by the maintenance of outmoded industrial root metaphors. If we are to be sure of the authentic use of ecological terms, an explicit discussion of an ecological root metaphor should be clearly stated within these documents. A mismatch between the root metaphor and the language used within the strategy will be a trigger for pedagogic

frailty [74] within the institutional natural history. The imposition by those in power of the industrial metaphor and the subsequent deterministic goal setting within education reminds us of the dominance of linear systems and their consequences:

> Truth is always relative to a conceptual system that is defined in large part by metaphor. Most of our metaphors have evolved in our culture over a long period, but many are imposed upon us by people in power. In a culture where the myth of objectivism is very much alive and truth is always absolute truth, the people who get to impose their metaphors on the culture get to define what we consider to be true. [75] (pp. 159–160)

However, experience has shown that traditional forms of strategic planning that utilise linear, top-down directives typically lead to insincere adoption by lower levels of staff, who feel that their professional activities are only loosely linked to higher-level strategies. The importance of shared vision is emphasised by Gilstrap [76], and its role in acting as a 'strange attractor': a force that draws a complex adaptive system (such as a university) towards a given trajectory. This cannot be mandated by leaders; it must emerge from within the organisation based on the experiences of those working there. This community experience can be martialled to consider an 'imagined future' that is more socially just and ecologically sustainable. A tool to facilitate such reflection is offered by the Three Horizons model [77] (Figure 5), which can help focus discussions on overcoming barriers to achieving an imagined future (such as the ecological university) by forcing the consideration of pathways of both destruction and growth [78]. Within this framework, the task of the management team is to facilitate the move through the 'triangle of change' [79] by reframing discourses in Horizon 2 to enable the academic teams to achieve their imagined future—Horizon 3.

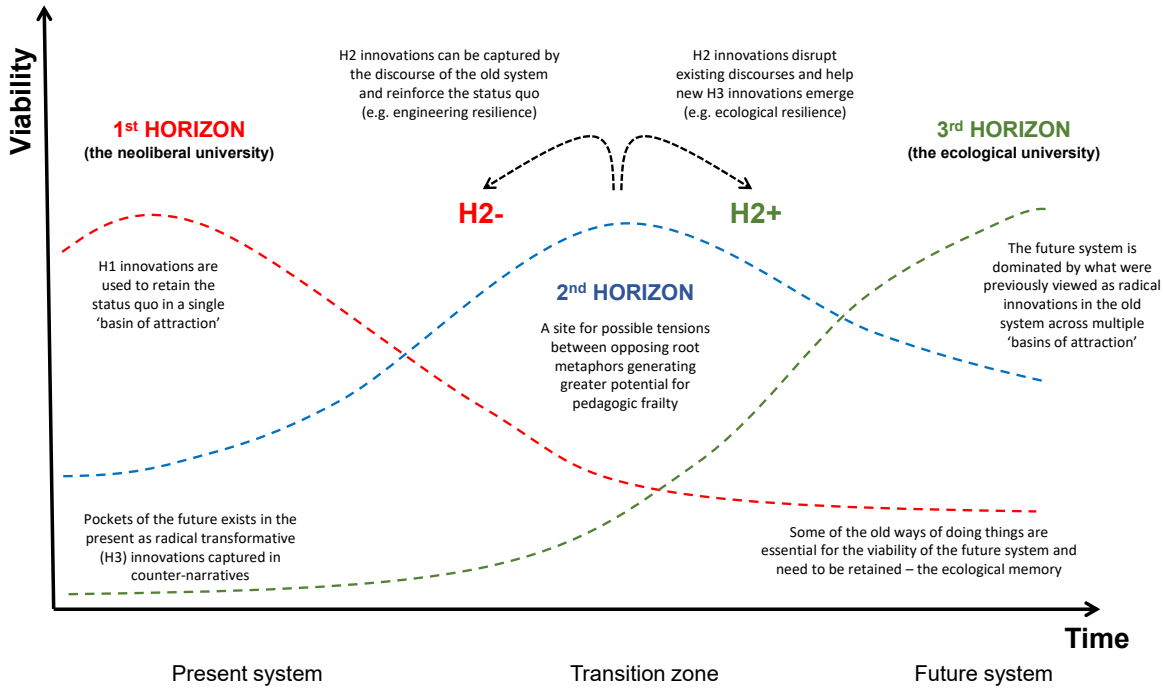

Figure 5. The Three Horizons model to illustrate the task of moving from the current system (H1) to an imagined future (H3) that requires navigation past a transition zone (H2). Redrawn and modified from Fazey et al. [80] to emphasise the transition from the neoliberal university to the ecological university.

Those experiences, therefore, need to be recorded with the institutional natural history. The role of university leadership, in this instance, is to create an environment where understanding of the complex ecological elements of the environment can emerge in

a manner that can be appreciated by the workforce, to highlight connections between elements within the institutional natural history, and to acknowledge and value the complex roles that individuals (and teams) play within the ecosystem—even when those roles do not necessarily contribute directly to the most prestigious, highly marketized activities within the institution, but nonetheless undertake vital, if unobtrusive, activities that maintain the health of the system [81]. Cataloguing the institutional natural history [24], and its change over time, is necessary, as past states or experiences within a community will influence current and future ecological responses, and so contribute to institutional learning [66]. In the absence of this information, there is a danger that the institution will revert to exhibition of the characteristics described as 'universities of non-learning' [82]. Universities (and other corporations) struggle to incorporate Strategic Development Goals (SDGs) into their strategic planning, but typically without first problematising what is meant by development [83,84], with the result that short-term economic worries tend to trump longer term ecological concerns [85,86]. In this way the neoliberal narrative can reterritorialize the ecological narrative to maintain the status quo ('H2-' in Figure 5).

To close, I invoke the oft-quoted "Titanic metaphor", where the institution is likened to a sinking ship in times of trouble. Rather than managers engaging in displacement activities that only give the impression of action, akin to "shuffling the chairs on the deck while the ship goes down", the focus on root metaphors is like "navigating icebergs in the ocean". While metaphorically "rearranging deck chairs" by tinkering with local procedures and practices may generate cosmetic improvements and offer a very short-term gain in customer satisfaction, this is doomed to failure in the longer term as the viability of the neoliberal university model declines (Horizon 1 in Figure 5), offering little more than a distraction if the "icebergs" cannot be avoided. To avoid the icebergs, universities need to reconsider what underpins their strategies, which theories are in play, and which metaphors are best placed to convey the intended message and contribute positively to shared vision within the institution.

8. Going Forward

In this paper, I have drawn upon a breadth of literature sources to construct a conceptual consilience of ecological perspectives and its implications for university strategy. I have demonstrated how the incremental development of institutional education strategies and the language used within them may be problematic, as specialist terms may be misinterpreted when there are tensions between competing root metaphors. Those who are tasked with the job of writing university strategy documents need to demonstrate greater awareness of the complex context in which the language of the strategy operates. I would, therefore, make three recommendations. First, the accommodation of a 'new' root metaphor requires a *punctuated change* in approach to ensure a consistency of messaging across all levels of the university. This needs to be clearly signalled within the strategy document. The implication of this is that a process of updating strategy documents is more than just tweaking text. It needs to be preceded by a careful consideration of the underpinning root metaphor and its implications. Secondly, to emphasise a coherence of messaging within the document, the connections between key terms need to be emphasised. This can be achieved by avoiding the use of long lists of bullet points that tend to support a fragmented understanding, and by adopting a more narrative elaboration supported by appropriate diagrammatic summaries. Finally, the theories and philosophies that provide the foundation for strategy documents need to be clearly explained and supported, preferably with references to original source materials. This will be most powerful when the supporting research is contextually relevant, drawing on evidence from deep understanding gathered from within the institutional natural history. The richness of the available evidence can be increased by adopting a culture of active engagement with the scholarship of teaching and learning (SoTL).

In the discussion above I offer two tools that have not typically been used to support the development of strategy documents to help address these points. The concept of the

'basin of attraction' (Figure 4) provides a lens to focus on the need for stability through engineering resilience that can be balanced with the need for change that requires ecological resilience. Decisions about balancing stability and innovation should be purposeful and need to consider the current state of the institutional ecosystem [87]. The second tool is the Three Horizons model (Figure 5) that helps to make explicit the imagined future for which the strategy might be considered to be a route planner. In combination, these tools (informed by the supporting literature cited here) can help to guide the language of strategy documents to change expectations of what is normal [88], to be clear about institutional ambitions and support the wider adoption of ecological root metaphors in university education strategies.

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Appendix A

URLs of strategy documents in the sample [all accessed March 2022]:
Aston
https://www.aston.ac.uk/sites/default/files/education-strategy.pdf
Bath spa
https://www.bathspa.ac.uk/media/1188b-Education-Strategy-final.pdf
Bristol
https://www.bristol.ac.uk/media-library/sites/academic-quality/documents/education-strategy-2017-23.pdf
Cardiff
https://www.cardiff.ac.uk/__data/assets/pdf_file/0007/11698/Education-and-students-sub-strategy-English.pdf
Durham
http://cuths.org/sites/default/files/University%20strategy%202017-2027.pdf
Edinburgh
https://www.ed.ac.uk/files/atoms/files/learning_teaching_strategy.pdf
Essex
https://www.essex.ac.uk/governance-and-strategy/university-strategy
Exeter
https://www.exeter.ac.uk/media/universityofexeter/aboutusresponsive/documents/2019EXE007_Ed_Strategy_st3.pdf
Glasgow
https://www.gla.ac.uk/myglasgow/learningandteaching/strategy/
Huddersfield
https://www.hud.ac.uk/media/assets/document/teachingandlearning/tl-strategy.pdf
Imperial
https://www.imperial.ac.uk/media/imperial-college/about/leadership-and-strategy/vp-education/public/LearningTeachingStrategy.pdf
KCL
https://www.kcl.ac.uk/study-legacy/learningteaching/education-strategy/read-the-strategy.pdf
Lancaster
https://www.lancaster.ac.uk/media/lancaster-university/content-assets/documents/strategic-planning--governance/publication-scheme/3-what-our-priorities-are/EducationStrategy.pdf
Manchester Metropolitan

https://www.mmu.ac.uk/sites/default/files/2022-04/Manchester-Met-Strategy-Booklet-2022.pdf

Nottingham

https://www.nottingham.ac.uk/strategy/documents/ese-strategic-delivery-plan-approved-final-09.04.21.pdf

Oxford Brookes

https://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKEwj8guaO17H4AhUSnVwKHdMuBV4QFnoECAkQAQ&url=https%3A%2F%2Fwww.brookes.ac.uk%2Fdocuments%2Fabout%2Fstrategy%2Funiversity-strategy-2035%2F&usg=AOvVaw2GqIA8aC-zDeDE8TisKr4w&cshid=1655372501019904

Plymouth

https://www.plymouth.ac.uk/uploads/production/document/path/13/13158/EducationStudentExperienceStrategy2018.pdf

Queen's

https://www.qub.ac.uk/home/Filestore/Filetoupload,1118456,en.pdf

St. Andrews

https://www.st-andrews.ac.uk/policy/academic-policies-quality-and-standards/education_strategy.pdf

Westminster

https://www.westminster.ac.uk/sites/default/public-files/prospectuses/Education-Strategy-2020-2023.pdf

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