Education for Sustainability: Rethinking Digital Teaching and Learning Strategy

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Abstract

In this paper I argue that National strategy relating to digital learning and teaching in Higher Education (HE) both foregrounds technology as a means to advance a neoliberal policy agenda, and neglects HE's pivotal role in equipping graduates to deal with global sustainability challenges. I argue for an alternative framing of digital teaching and learning in policy discourse that, rather than being underpinned by neoliberal ideology, aims to prepare graduates to contribute to a more sustainable global society.

Neoliberalism, a worldview that puts faith in the supremacy of the free market at the heart of all human activities, has become the prevailing ideology determining the purpose and operation of HE systems worldwide. HE tends to be presented in policy and strategy discourse as being primarily concerned with enhancing economic growth and global competitiveness, and with advancing the wealth and social mobility of the individual. Given the increasing influence of neoliberalism on HE, it is perhaps unsurprising that we see evidence of neoliberalism's influence in digital teaching and learning strategy. In order to demonstrate this in detail, I will draw on some of the findings of a Critical Discourse Analysis (CDA) of 13 UK digital teaching and learning strategies. Across the strategies the need to grow the economy and to upskill citizens accordingly is presented as one of the main drivers for implementing digital learning and teaching in HE. As well as primarily framing digital learning and teaching as a means to advance the neoliberal agenda, the strategies also fail to reference the role that digital technologies might play in supporting pedagogical strategies aimed at developing the attributes that students will need to address sustainability challenges. I will conclude by referring to some examples of good practice in the use of digital technologies to support sustainability education, and by making some recommendations for future policy and strategy directions.

1 Introduction

Higher Education (HE) has an essential role to play in promoting sustainable global development, and in equipping graduates to deal with environmental and resourcing challenges (Shephard 2015). In this paper, I argue that National strategies relating to digital learning and teaching in HE frame technology as a means to advance a neoliberal policy agenda that elevates economic success above all other priorities. In addition, such strategies fail to consider the role that digital technologies might play in equipping graduates to address global sustainability issues. In order to demonstrate this in detail, I draw on some of the findings of a Critical Discourse Analysis (CDA) of 13 UK digital teaching and learning strategies spanning the time frame 2003–2013, and amounting to a corpus of approximately 138, 900 words (Munro, 2016). Across the strategies advancing economic growth is promoted as a key priority for HE, with the need to compete in the knowledge economy and to upskill citizens accordingly repeatedly presented as key drivers for implementing digital learning in HE. Digital learning is also frequently framed as a way to facilitate wider

and lifelong participation in HE, and although the social benefits of the aforesaid are sometimes referred to, these are eclipsed by a focus on their claimed economic purpose. As well as framing digital learning and teaching as a means to advance the neoliberal agenda, the strategies also fail to reference the role that digital technologies might play in supporting pedagogical strategies aimed at developing the attributes that students will need to address sustainability challenges. I argue for an alternative framing of digital teaching and learning in policy discourse that, rather than being underpinned by neoliberal ideology, aims to prepare graduates to contribute to the development of a more sustainable global society.

2 Neoliberalism, Higher Education and Sustainability

Four suppositions lie at the heart of neoliberal ideology: 1. The self-interested individual - Individuals are self-interested and rational economic actors; 2. Free market economics - The market is the most efficient mechanism for allocating resources and opportunities; 3. Laissez-faire - Markets are self-regulating, hence state power and intervention in their operation should be minimised; and 4. Free trade - Global free trade and open economies are prerequisites for economic growth (Olssen & Peters, 2005). Neoliberal orthodoxy has grown exponentially from its roots as a peripheral economic theory and has proliferated into a global political and economic hegemony (Harvey, 2005). Critics of the neoliberal thesis point out that neoliberalism rests on at best, questionable, and at worst, entirely flawed, prepositions. The untrammeled market was heralded by its forefathers as a failsafe method for achieving capital growth and accumulation; yet overall growth rates have declined under neoliberal regimens (Harvey, 2005). Advocates allege that the application of neoliberal principles will achieve a better standard of life for all; neoliberal policies have instead primarily benefited the already privileged, and the gap between the poorest and the richest has grown (Harvey, 2005). Furthermore, the elevation of economic success over all other priorities is contributing to the destruction of the physical environment and is squandering scarce physical resources (Foster *et al*. 2011) as well as hindering attempts at sustainable development (Kumi *et al*. 2014).

HE systems worldwide are increasingly organised around neoliberal principles. Proponents of neoliberalism assert that market-based competition and economically focused priorities result in Universities becoming more efficient, innovative and entrepreneurial; leads to a higher quality of research activity and education provision; generates better diversity of provision; and results in a better alignment between HE's 'outputs' (research and graduates) and the needs of the economy and society. Under successive neoliberal regimes, however, there has been a marked shift from a combination of social, cultural, and economic goals for HE towards an almost exclusively utilitarian purpose. HE's function now tends to be presented in policy and strategy, and indeed across much contemporary discourse, as being primarily concerned with enhancing economic growth and global competitiveness, and with advancing the wealth and social mobility of the individual. Yet HE has an essential role to play in equipping graduates with the skills and competencies required for sustainable and responsible living in an increasingly fragile physical environment (Shephard 2015); a narrow instrumental and individualistic focus on the role of HE risks sidelining these important issues.

3 Neoliberalism and Digital Learning and Teaching Strategies

Given the increasing influence of neoliberalism on HE, coupled with neoliberalism's wholesale embrace of ICTs, the "privileged technology of neoliberalism" (Harvey, 2005, p.159), it is unsurprising that we see evidence of neoliberalism's influence in digital learning strategies (Hayes, 2016; Roumell & Salajan, 2016). Across the 13 strategies analysed, a key motivation for digital teaching and learning is as a means to advance economic growth. Although digital technologies are portrayed as a way to enable lifelong and wider participation in HE, the primary objective again seems to be to advance economic competitiveness. For example:

> [E]ffective application of technology in learning can help underpin the knowledge based economy in Wales, and drive its growth. (ELWa, 2003, p.12)
>
> [Digital teaching and learning] can contribute to all the Government's objectives for education – to raising standards; improving quality; removing barriers to learning and participation in learning; preparing for employment; upskilling in the workplace. (DfES 2003, p.4)
>
> [Digital Learning is] ideal for helping learners develop the skills they need for the knowledge-based economy. (DfES, 2005, p.27)
>
> We recognise the role technology-enhanced learning may play in ensuring that HEIs in Wales maintain competitiveness in the global marketplace and contribute to the knowledge economy". (HEFCW, 2008, p.2)

While it is certainly important that HE remains relevant to the economy, framing a country's advancement solely in economic terms disregards other essential aspects of societal welfare and environmental concern. Economic growth does not necessarily equate to a better quality of life: levels of education, health, and employment are all poorly correlated with growth (Drudy 2009; Nussbaum 2010). Additionally, while a country may be performing economically well overall, it does not mean that there is a fair distribution of income (Drudy, 2009). Focusing only on economic performance also neglects the impacts of the unfettered pursuit of growth on resource depletion and environmental degradation (Kubiszewski *et al*., 2013).

For Keep (2011, p.25) "what is excluded [from policy and strategy] is usually every bit as important as what is included". It is therefore notable that, with the exception of the two perfunctory references below, across the 138 900-word corpus no reference is made to the role that HE might play in relation to addressing issues of climate change and sustainability:

> You may also wish to consider the role of technology in relation to other issues, including: […] Education for Sustainable Development and Global Citizenship. (HEFCW, 2008, p.11)
>
> Becta will develop approaches to technology infrastructure that encourage architectures which use less power and allow users to make better use of devices and technology which negate the need for energy consumption in other ways, such as remote working. (Becta, 2008, p.40)

These findings are not exclusive to the UK: similar patterns are evident in national digital learning strategies worldwide. In their review of EU digital teaching and learning policy, Salajan and Roumell (2015) note clear linkages between the stated aims of the strategies and aspirations to enhance the EU's economic competitiveness. In their review of global digital teaching and learning strategies, Brown *et al*. (2007, p.80) found that "a strong economic imperative is common to many e-learning policy initiatives". Referring to their content analysis of the USA's four National Education Technology Plan (NETP) documents, Roumell & Salajan (2016, p. 365) highlight that "endemic tensions within the NETP discourse become apparent in

the competing visions of education as a means of both conferring economic fluency and mobility to individuals within the society".

The relationship between policy and practice is complex, and there is frequently a disconnect between education strategy as it is articulated, and its application and outcomes (Coffield *et al.* 2008); thus it is difficult to determine the extent to which the policies considered have impacted on HE. What is certain, however, is that the strategies send out a clear message regarding the policy-makers' perceptions about the purpose of HE, and the role that digital learning should play in achieving the same. Moreover, the UK strategies analysed framed several funding opportunities for the exploration of the use of technology in HE in the UK, with such programmes claimed to have had lasting impacts (Jisc & Million+, 2009). It is also clear that, despite the rhetoric surrounding the claimed transformative potential of digital technologies, their deployment in HE has been rather more banal. Digital technologies have mainly been used to support rather than to transform practice, often replicating face-to-face teaching strategies, automating administrative tasks, or promoting, content-driven pedagogical models (Kirkwood & Price, 2014; Walker *et al.*, 2016). With this in mind, it is worth exploring what digital learning might look like if the strategy for its implementation was framed by an alternative vision for HE, one that aspires to prepare graduates to contribute to the development of a more sustainable global society. In order to do this, in what follows I discuss some examples of good practice that demonstrate how the judicious application of digital technology to learning and teaching might support education for sustainability.

4 Education for Sustainability: The Role of Digital Technologies

The skills and attributes that graduates will require to address issues of global sustainability and climate change include the capacity to communicate with, and empathise with those of different cultures and beliefs, as well as an ability to think critically and ethically about the global issues facing humankind as a 'citizen of the world' (Nussbaum 2010; Raphael et al. 2010; UNESCO 2014). Digitally mediated approaches that could support students to develop these capacities include telecollaboration, digital storytelling, and role-playing games and simulations.

Intercultural competence, the ability to effectively communicate and collaborate with those who are culturally different from oneself, is crucial if citizens are to work collectively towards addressing global concerns (Deardorff 2009). Cultivating understanding and empathy with others is essential to engendering intercultural competence (Nussbaum 2010). But it can be difficult for people to identify with those who are socially or culturally different, or who are geographically distant (Bachen *et al.* 2012). Telecollaboration involves enabling geographically dispersed learners to engage in dialogue and intercultural exchange. This is not a new concept: technology supported tandem learning, an approach that pairs learners with complementary target and native languages in bilingual/bicultural exchanges, has been employed in language teaching for over two decades (Sasaki 2015). More recently, there has been some limited exploration of the extension of online intercultural exchange supporting the development of intercultural competence beyond language learning, via online discussion forum exchanges (Benabdallah 2016); using audio-visual communication (Kirby & Amendolara 2016); in virtual worlds (Canto *et al.* 2013); and via online games (Thorne 2008).

Another relatively under-explored digitally mediated mechanism through which intercultural awareness and understanding might be fostered is digital storytelling, an approach with roots in social justice education

(Lambert 2012). The multimodal nature of digital stories can support students to share their lived experiences in a richer and more dynamic way than is possible via written communication alone. Digital storytelling can also be a powerful mechanism for engaging young people in learning about, and reflecting on, the local contexts that are both affected by, and contribute to, global issues such as the environment and climate change (Truong-White & McLean 2015).

Role-play can be an effective way to help individuals to cultivate empathy with those who differ from them in circumstances or viewpoint (Nussbaum 2010). Role-play enabled via electronic games, simulations, and virtual worlds may be particularly suited to fostering empathy, since such media can enable participants to become immersed in the roles and perspectives of others within authentic and multimodal environments (Raphael *et al.* 2010). A good example is the Real Lives game, which allows players to 'inhabit' the lives of people around the world including their experiences of education, employment, relationships, family, disease, natural disasters etc. Bachen *et al.* (2012) found that students who played the game expressed greater global empathy and demonstrated more interest in learning about other cultures.

Digital Games and simulations can also help to foster the systematic and critical thinking necessary for sustainable development, since they can allow students to access institutional, geographical, and temporal settings that it would not otherwise be possible to explore or experience (Bachen *et al.* 2015). Well-crafted games and simulations can also support the development of the leadership skills and collective action required to address real-world problems (Raphael et al. 2010). Digital games can also challenge participants to consider multiple perspectives on contested events or ideas, either during the game, or in post-game class discussions (Bachen *et al.* 2015). Well-designed games and simulations can also support the development of the critical and ethical reasoning ability required to address sustainability issues, due to the immersive opportunities that they might generate for students to experience and reflect on ethical dilemmas and to explore the consequences of their choices (Schrier & Gibson 2010). For example, in order to 'succeed' in the Macdonald's Game players must maximise profits by clearing rainforests, mistreating animals, violating workers' rights, engaging in poor food safety practices, and partaking in questionable political lobbying. It can also be difficult for individuals to see themselves as part of the bigger picture, or for them to see how their actions can influence these global issues (Blake 1999). Games and simulations have shown some potential to support students to learn about, as well as to generate local and global actions in relation to these crucial issues. For example, Nilsson & Jakobsson (2011) used SimCity to support students to explore models of future sustainable cities. World Without Oil is another excellent example of the type of game that could help students to ground learning about global sustainability issues within their own local contexts, and in demonstrating that individual and local actions towards change are attainable and can have global impact. The online multi-player game simulated the first 32 weeks of a global oil crisis, and was played by over 1900 people worldwide over a 3-week period. Participants collaborated to work out strategies to survive in a world without oil (Rusnak *et al.* 2008). Another interesting example is Shortfall Online. Teams of players learn to manage simulated companies within the automobile supply chain, and make decisions based on trade-offs between economic, environmental, and social impacts (Gennett 2010).

5 Policy Implications

As the examples above illustrate, if digital learning strategies were to be motivated by an alternative set of assumptions about the role of HE, then manifestations of digital learning could look quite different. At the

time of writing the European Commission (EC) has recently published the Digital Education Plan 2021-2027: Resetting education and training for the digital age (EC, 2020). It is significant that this document makes reference to the role of education in sustainable development:

> Education and training are key for personal fulfilment, social cohesion, economic growth and innovation. They are also a critical building block for a fairer and more sustainable Europe. (EC, 2020, p.2).

Digital skills are also identified as having a role to play in sustainable development:

> A changing society and the transition to a green and digital economy require solid digital competences. Boosting digital skills at all levels helps increase growth and innovation and build a fairer, more cohesive, sustainable and inclusive society. (EC, 2020, p.12).

While this shift in emphasis is certainly a step in the right direction, there is a risk that the 'Green agenda' becomes a smokescreen for the continued unfettered pursuit of economic growth at the expense of sustainability priorities, with digital teaching and learning remaining complicit in the same. Instead, there is a need for future HE policy, in general, and digital teaching and learning strategy in particular, to clearly set out the skills and attributes that our graduates will require to address issues of global sustainability and climate change, and then to consider the role that technology might play with respect to the same.

References

Bachen, C., Hernández-Ramos, P., & Raphael, C. 2012. Simulating REAL LIVES: Promoting global empathy and interest in learning through simulation games. Simulation & Gaming, **43**(4), 437-460.

Bachen, C., Hernández-Ramos, P., Raphael, C., & Waldron, A. 2015. Civic play and civic gaps: Can life simulation games advance educational equity? Journal of Information Technology & Politics, **12**(4), 378-395.

Becta. 2008. Harnessing technology: Next generation learning. Becta, on behalf of the Department for Children, Schools and Families & The Department for Innovation, Universities and Skills

Blake, J. 1999. "Overcoming the 'value-action gap' in environmental policy: Tensions between national policy and local experience", Local Environment, **4**(3), 257-278.

Brown, M., Anderson, B., & Murray, F. 2007. E-learning policy issues: Global trends, themes and tensions. Proceedings of Ascilite 2007: ICT: Providing choices for learners and learning (pp.75-81).

Canto, S., Jauregi, K. & van den Bergh, H. 2013. "Integrating cross-cultural interaction through video-communication and virtual worlds in foreign language teaching programs: is there an added value?" ReCALL, **25**(1),105-121.

Coffield, F., Edward, S., Finlay, I., Hodgson, A., Spours, K. and Steer, R. (2008). Improving learning, skills and inclusion: The impact of policy on post-compulsory education, London: Routledge.

Deardorff, D.K. 2009. The SAGE handbook of intercultural competence, SAGE, London.
DfES 2003d. Towards a Unified e-learning Strategy. Consultation Document, Department for Education and Skills (DfES).

DfES. 2005. Harnessing technology: Transforming learning and children's services. Department for Education and Skills (DfES).

Drudy, P. 2009. Problems with economic growth: Towards a better measure of progress? In B. Reynolds, & S. Healy (Eds.), Beyond GDP: What is prosperity and how should it be measured? (pp. 1-14). Social Justice Ireland.

ELWa. 2003. An e-learning strategy for wales. National Council of Education and Training for Wales

European Commission. 2020. Digital Education Plan 2021-2027: Resetting education and training for the digital age. https://ec.europa.eu/education/education-in-the-eu/digital-education-action-plan_en

Foster, J. B., Clark, B., & York, R. 2011. The ecological rift: Capitalism's war on the earth. Monthly Review Press.

Gennett, Z. A. 2010. Shortfall online: The development of an educational computer game for teaching sustainable engineering to millennial generation students. (Unpublished master's thesis). North Eastern University, Boston.

Harvey, D. 2005. A brief history of neoliberalism. Oxford University Press.

Hayes, S. 2016. Learning from a deceptively spacious policy discourse. In: T. Ryberg, C. Sinclair, S. Bayne, M. de Laat. (Eds.), Research, Boundaries, and Policy in Networked Learning. Research in Networked Learning (pp. 23-40). Springer.

Jisc and Million+. 2009. From inputs to impact. A study of the impact of JISC funding on universities. http://www.jisc.ac.uk/publications/documents/millionplusfundingimpact.aspx

Keep, E. 2011. The English skills policy narrative. In A. Hodgson, K. Spours & M. Waring (Eds.), Post-compulsory education and lifelong learning across the United Kingdom. Policy, organisation and governance (pp. 18-38). Institute of Education, University of London.

Kirby, V. & Amendolara, S. 2016. "Intercultural Encounters through Video Conferencing", Paper presented at: The Second International Conference on Telecollaboration in Higher Education, Trinity College, Dublin, 21-23 April.

Kirkwood, A., & Price, L. 2014. Technology-enhanced learning and teaching in higher education: What is 'enhanced' and how do we know? A critical literature review. Learning, Media and Technology, **39**(1), 6-36.

Kubiszewski, I., Costanza, R., Franco, C., Lawn, P., Talberth, J., Jackson, T., & Aylmer, C. 2013. Beyond GDP: Measuring and achieving global genuine progress. Ecological Economics, **93**, 57-68.

Kumi, E., Arhin, A.A. & Yeboah, T. 2014. "Can post-2015 sustainable development goals survive neoliberalism? A critical examination of the sustainable development–neoliberalism nexus in developing countries", Environment, Development and Sustainability, **16**(3), 539-554.
Lambert, J. 2012. Digital storytelling: Capturing lives, creating community, Routledge.

Munro, M. 2016. A Decade of E-Learning Policy in Higher Education in the United Kingdom: A Critical Analysis. (Unpublished doctoral dissertation). University of Glasgow, Glasgow

Nilsson, E. M., & Jakobsson, A. (2011). Simulated sustainable societies: Students' reflections on creating future cities in computer games. Journal of Science Education and Technology, **20**(1), 33-50.

Nussbaum, M. C. 2010. Not for profit: Why democracy needs the humanities. Princeton University Press.

Olssen, M., & Peters, M. 2005. Neoliberalism, higher education and the knowledge economy: From the free market to knowledge capitalism. Journal of Education Policy, **20**(3), 313-345.

Raphael, C., Bachen, C., Lynn, K., Baldwin-Philippi, J. & McKee, K.A. 2010. "Games for civic learning: A conceptual framework and agenda for research and design", Games and Culture, **5**(2), 199-235.

Roumell, E. A., & Salajan, F. D. 2016. The Evolution of U.S. e-Learning Policy: A Content Analysis of the National Education Technology Plans. Educational Policy, **30**(2), 365–397.

Rusnak, P., Dobson, T., & Boskic, N. 2008. Articulation of ecological values in alternate reality gaming: A case study of world without oil. Proceedings of the 2nd European Conference on Games Based Learning (pp. 383-392).

Salajan, F. D. and Roumell, E. A. 2016. Two Decades of E-Learning Policy Evolution at EU Level. European Journal of Education, 51, 391-407.

Sasaki, A. 2015. "E-mail Tandem Language Learning" in Language Learning Beyond the Classroom, eds. D. Nunan & J.C. Richards, Routledge, pp. 115-125.

Schrier, K. & Gibson, D. 2010. Ethics and Game Design: Teaching Values through Play: Teaching Values through Play, IGI Global.

Shephard, K. 2015. Higher Education for Sustainable Development, Palgrave Macmillan.

Thorne, S.L. 2008. "Transcultural communication in open Internet environments and massively multiplayer online games" in Mediating Discourse Online, ed. S.M. Pierce, John Benjamins Publishing Company, pp. 305-327.

Truong-White, H., & McLean, L. 2015. Digital storytelling for transformative global citizenship education. Canadian Journal of Education, **38**(2), 1.

UNESCO. 2014. Global citizenship education: Preparing learners for the challenges of the twenty-first century. Paris: United Nations Educational, Scientific and Cultural Organization (UNESCO) https://www.gcedclearinghouse.org/resources/global-citizenship-education-preparing-learners-challenges-21st-century

Walker, R., Voce, J., Swift, E., Ahmed, J., Jenkins, M., & Vincent, P. 2016. UCISA report: 2016 survey of technology enhanced learning for higher education in UK. Universities and Colleges Information Systems Association (UCISA). https://www.ucisa.ac.uk/tel