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Exploring possible worlds: open and participatory tools for critical data literacy and fairer data culture.

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Abstract

This chapter is inspired by the webinar I was invited to give earlier in 2020 as part of the project Fair Data Cultures in HE. My doctoral research looks into the interplay between structure, culture and students' agency in the context of open educational practices in HE from a critical realist perspective. Thus, it is from that standpoint that this chapter is going to be addressed. That is, looking into the deeper levels of social reality where young people are embedded, in particular, students' relationship with open and participatory tools in HE. I will explore how can educators provide pedagogical opportunities for open educational practices that enable an explorative and critical mindset so that students are able to go beyond the broader acceptance of the socio-political structures they are embedded being prepared to uncover and question apparatuses and structures that perpetuate mechanisms of surveillance capitalisms as Zuboff (2019) demonstrates.

Keywords

Utopia, open web, data literacy, open education, data culture, HE

Introduction

This chapter, as the title indicates, sets out to explore possible worlds; alternatives to that which we live in. I am interested in imagining alternatives to the current ways that young people interact with (open and participatory) digital technology (in an educational context) and the consequences that that way of interacting might has in the approach taken to data-intensive technologies and data-driven systems, and in a broader sense, the understanding that young people have of what an open society is and moreover, what it can be.

In short, this chapter explores an alternative world where young people reflexively engage with open and participatory (O+P) tools to contribute to and shape as far as possible an open society, instead of engaging superficially with more traditional closed and proprietary tools. Open and participatory tools, in the context of higher education (HE), are considered digital technologies that afford and promote collaboration, co-construction of knowledge, and the sharing of content/information as a way of participating through the open web to a more open society (I will expand upon them further later in the chapter). These tools are not necessarily open source though many of them are.

The way I am going to undertake this political analysis is through utopian thinking, because as Ursula LeGuin (2016) sustains, envisioning utopias allows us to envisage a place where people might have a better chance to live both rightly and well. Bhaskar's work on concrete utopias (2016: 16) -a theory of transition and struggle- adds to LeGuin's idea by arguing that, "concrete utopianism forms an indispensable component of ethical thinking" (…) "it [concrete utopianism] is a key figure for thinking about how to effect a transition to the good society". (Ibid: 93). I am also inspired by the work of Erik Olin Wright, who has widely written about real utopias (2006, 2010). The first step will be defining what is utopia and concrete utopian thinking, and how do we get there. Whilst the second step will be to outline the structure of the utopian journey I set out in this chapter and how does the utopian land looks like in my proposal and what are the potentialities in it.

Let us start then by introducing some features of utopia and defining it. Utopia begins with politics and according to Jendrysik (2020: 2), "Utopia might not end with politics, but the nature of political life, the distribution of power among individuals and in society, and the legitimacy of authority over the community lie at the heart of utopian thought". The political nature of utopia is suited for thinking about technology, because as Winner (1980) argued four decades ago, technological artefacts have political properties, that is, technologies are political. By political, Winner was referring to the "arrangements of power and authority in human associations as well as the activities that take place within those arrangements" (p. 123). Levitas (2013: xi) argues that,

> *The core of utopia is the desire of being otherwise, individually, and collectively, subjectively and objectively. Its expressions explore and bring to debate the potential contents and context of human flourishing. It is thus better understood as a method than a goal -a method elaborated (…) as the Imaginary Reconstruction of Society.*

Furthermore, to make such reconstruction possible (after imagining it) there is a need to

envision utopian thinking towards what Bhaskar described as concrete utopianism, that is, "the exercise of constructing models of alternative ways of living on the basis of some assumed set of resources, counterbalancing actualism, and informing hope." (Bhaskar, 2008: 395).

Utopianism, it is argued by Sargent, (2010) begins with a state of dissatisfaction but does not stay there as it has to find concrete and viable alternatives. Utopia, thus, provides a platform to critique the social reality in which we live and seeks to open mental space for a different understanding to present social, economic, and political arrangements. In so doing, utopia attempts to expand the limits of what is possible by challenging the social and political structures that appear 'natural', even 'commonsensical'. Utopian thought tries to establish "real freedom [where] people have actual capacities to make choices that matter to them, and this requires that they have access to the basic resources needed for acting on their plans." (Wright 2010: 18-19). Hence, a given concrete utopia is agency dependent. Translated into the context of digital technology in HE, this can be understood as agency in digital spaces; agency as the ability to act and do things otherwise (Archer, 2002). Agency thus, involves actively searching for unrealised possibilities for change in the established social order. To summarise, what is proposed in this chapter is not wishful thinking but concrete utopianism, that is, envisioning a real utopia, a viable and concrete alternative to current open educational digital practices, in particular HE digital practices.

The outline of this chapter is as follows, in the first section I describe my dissatisfaction with the current state of educational technology in HE, which I argue responds partially to deterministic ideas about not only technology in education in general, and HE in particular, but also, about students who are described as native speakers of a digital language overlooking the more complex and nuanced reality they live, when trying to make sense of digital technologies while studying. I also explain my dissatisfaction with the managerial university that is imbued with a neoliberal ideology, where efficiency and effectiveness are at the forefront shaping how educational technology is imagined and deployed. Furthermore, all this happens in a society that is increasingly surveyed by big tech corporations but not necessarily informed about such surveillance. A society that, as Benjamin (2019) describes, produces invisible and pervasive technical codes using data that is produced through histories of exclusion and discrimination (p.10). In the second section**,** I highlight some contradictions present in the context described and highlight opportunities that exist despite the obstacles described in the first section, whilst in the third section, I offer ways in which we can take advantage of the available opportunities to move us in the direction of social change and hopefully, of social empowerment. This would enable individuals to participate proactively in an open society that seeks to strengthen the common good and broader the well-being of its citizens. The last section concludes the ideas exposed in the chapter.

Diagnosis and critique

The purpose of critique is to influence political practice by providing reason and justification for social change. Thus, to frame the critique developed in this first section I will introduce the reader to my theoretical position in relation to social change. In this regard, I will

briefly explain the main tenets of critical realism (CR) as my broader philosophical understanding of social reality. Within that, I will address the work of Archer (1995), whose realist social theory underpins my ideas of social change as well as my conception of agency and the interplay between agency, structure and culture, which I consider to be one of the main driver for social change.

Critical Realism and Realist Social Theory

Critical realism (CR) is a meta-theoretical position in social science (Archer, 1995; Bhaskar, 1979, 1989), that is, a reflexive stance interested in providing a philosophical account of science and social science that then informs empirical investigations. Critical realism allows for orienting the enquiry towards the transformation of inadequate beliefs, practices, and structures. The central idea is that there is an ongoing tension between structure and agency. That is, structures precede human agency in so far as they provide the springboard, the material causes for human action, whilst they are constantly transformed by human activity, that is, human agency.

In the words of Bhaskar, the foundational mind behind CR (1998: 37),

> *Society is both the ever-present condition (material cause) and the continually reproduced outcome of human agency. And praxis is both work, that is, conscious production, and (normally unconscious) reproduction of the conditions of production, that is society. One could refer to the former as the duality of structure, and the later as the duality of praxis.*

The emphasis is therefore upon transformation. To this dynamic tension between structure and agency Archer (1995) added a third dimension, i.e. that of culture (the ideational aspect of society consisting of ideas, beliefs and theories), explaining that structure and culture impinge upon human agency, and that it is through the exercise of human power to act otherwise that humans can do so. Social change in the eyes of realist social theory (Archer, 1995) is the product of the interaction of human agents with social structures and culture. In her words,

> *It is only through analysing the processes by which structure and agency shape and re-shape one another over time that we can account for variable social outcomes at different times"* (1995, p. 64).

The advantage of working with Archer's theory is that she offers analytical tools to think about individuals as having agency and being able to do things that effect change, thus having control over their lives, if not always over the circumstances they live in. At the same time, she holds that social structures are real and influence what individuals do. These individuals through their social practices can potentially have an influence on structures (material or cultural), thereby changing them and as a consequence, altering their practices. Understanding social change as this interplay allows us to counter deterministic ideas of society and thus, of change. Change, therefore, is a dynamic process that occurs between the three realms or

dimensions of society, i.e. structure, culture and agency. In this chapter I will look at the interplay of material culture, material structure, and agency, as drivers of socio-cultural change with the aim of exploring how cultural change in HE can unfold, particularly data practices and their narratives.

To summarise, the framework I have described above offers the advantage of conceiving the individual not as completely subjugated or determined by social structures, but rather, as having the capacity (exercised or not) through their generative powers, i.e. their agency mediated through reflexive engagement[1] (more details about reflexive engagement will be given further in the chapter), to exercise autonomy and the ability to act intentionally to foster social change, which will have an impact on the practices they are part of as well as their own lives. At the same time, but in the longer term, the accumulated changes will eventually impact on the structure and thus, the cultural system of the institution, where the educational practices unfold. This will be of relevance for this book as it is an attempt to collect different views on the need of a change in culture, in particular, data culture in HE.

This begs the question of how can that cultural change take place and what is the role of the different actors who are part of Higher Education Institutions (HEIs)? Under a realist understanding of the world, change can only happen through human activity, that is, the action and interaction of agents (individual or corporate) with the structures (cultural structures and material structures (Newman, 2017)). However, as Marx said, "Men make their own history, but they do not make it as they please, they do not make it under self-selected circumstances, but under circumstances existing already, given and transmitted from the past" (Marx, 1852, 6th English ed. 1972, p. 10). It is through a purposeful interaction with those not chosen circumstances, experienced as constraints and/or enablement, that individuals shape their agency and thus, the world they live in (Archer, 1995) and its culture.

To conclude, social change under a CR perspective is non-deterministic given that social structures only exist in light of the activity they constrain or enable. Thus, social, and cultural structures depend for their existence on the activities of agents, their social practices, and the conception they have of those structures and practices (Lawson, 2007, P. 14).

In the next section, I critically examine the current state of affairs regarding educational technology and the managerial university that are embedded in a datafied society where increasingly data-driven systems oversee and execute fundamental decisions that impact individual's life.

Technological determinism in the HE context

Determinism concerns a variety of standpoints about the relationship between technology and other aspects of society. As Bimber (1990) explains, there are different ways in which technological determinism manifests in society. One is the nomological determinism, where there is no scope for human choices, as there is "only one possible future course for social change" (p. 4); the unintended consequences, where technology seems to be out of

[1] Reflexive engagement in this study is considered a generative mechanism, a causal power that make practices possible. It is oriented towards goals that are situated in a context and it requires means (tools or artefacts that are potential opportunities, as they are not pre-given, but rather, contingent) to mediate the tasks/practices to achieve the goals, being oriented towards personal values. Engagement is depicted as a question of personal reflexivity, whilst also being relational.

control, because certain values and ideas are concretised in within it, i.e. these are perceived as being fixed and hard to change; and the normative approach, where technology use is driven by efficiency and productivity and so, ethical and political processes are removed. This normative determinism is one where there is no political account of norms by which technology is advanced. Instead, what prevails are goals of efficiency or productivity[2]. In the words of Bimber (1990, p. 340), "Technology could be considered autonomous and deterministic when (…) the goals of efficiency and productivity become surrogates for value-based debate over methods, alternatives, means and ends". Lawson (2004) argues that under a deterministic understanding of technology, ethical and moral criteria are ignored, thus "producing a process that operates independently of larger political processes and context". (p. 6). Schatzberg (2012) argues that "most significantly, the instrumental concept of technology effaces the role of human agency. It focuses on innovation rather than use, treating technology like an objective force stripped of creativity and craft, subordinate to scientific knowledge, mere means to ends" (para 4). For CR it is human agency that elaborates or reproduces society, therefore effacing the role of it will be counterproductive for HE, as one of the main aims is to foster social change.

There is the risk of overlooking the discursive and interpretive process out of which technical things emerge (Hamilton and Friesen, 2013; Schatzberg, 2018). As a result, the complex ecology (network of interdependencies) where technology is designed and envisioned becomes invisible, bringing with it the risk of defining it in relation to the practical purposes that users assign to it. Implied in this assumption is the idea that individuals and institutions need to adapt to technological change, if they want to stay in the loop of development, assuming that this is directly linked to the deployment of technology at whatever cost. This has been proven not to be the case; particularly evidenced in different aspects concerning education and health during the pandemic. Progress is a socio-technical phenomenon, contingent, historical, and incredibly complex. The unexamined use of technology will definitely be the worst route to change in the educational context.

Counterarguing this idea of a neutral technology that drives inevitable and linear progressive change, Bijker and Law (1992, p. 3, as cited in Selwyn & Facer, 2013) put forward an understanding of educational technology that relies more on the social. Under this perspective, technologies are socially constructed, shaped, and negotiated among different actors and interests, which are the outcome of competing agendas, thus being political (Winner, 1980). Technologies have implicitly in their design and implementation a particular type of social order, which allows for some behaviours and impedes others (Matthewmann 2011). Selwyn and Facer (2013) encourage us to work connected with a more politically aware and sociologically grounded narrative of change that understands educational technology as an,

> *(…) intense site of negotiation and struggle between (…) different actors. These are struggles that take place across a number of fronts - from the allocation of resources to the design of curriculum, from maximizing the profit and political gain to attempts to mitigate patterns of exclusion. (Selwyn & Facer, 2013, p. 5).*

[2] No political account implies that the education system is numb to the politics of technology, thus it is not part of their interest. Instead, what matters are values of efficiency, questions related to 'does it work properly' but not questions around the political dimension of technology, that is for whom does it work and why for those and not for others.

Technological deterministic views do respond to the current neoliberal ideology that permeates all aspects of our lives, education being one of them. In the next section, I describe it.

The managerial university

The current landscape for HE is framed by a neoliberal architecture (Johnston, McNeill and Smyth, 2018), which implies a set of things, among them, the imposition of market mechanisms and managerial control. In this landscape, technological infrastructure is harnessed to achieve, amongst other things, market and consumer-based educational objectives. In the present neoliberal setting of HE (Pelletier, 2004; Johnston, McNeill and Smyth, 2018), there is a reduction in public funding and rising operational costs, which has prompted HE institutions to scrutinise the cost-effectiveness of many academic activities. This, in turn, has increased the casualisation of the workforce and thus, resulted in a steady increase in workloads for those who are not casual workers (University and College Union[3]), which has been accompanied by the imposition of market mechanisms and managerial control. In this landscape, universities compete for students as they represent the major source of income (this is particularly the case for post-92 universities in the UK context[4]).
In such fierce competition, HE institutions' mantra is 'value-for-money', which is presented as a key determinant of the student experience. Within this challenging environment, technological infrastructure is harnessed to achieve, amongst other things, a "market and consumer-based educational objective" (Johnston, McNeill and Smyth 2018; p. 11). When discussing the significance of digital technology for universities in terms of a neoliberal framework, this is assessed in terms of its technical capabilities, for example, how virtual learning environments (VLEs) enhance the experience of students (in terms of the availability of resources and organisation of the site) or support staff in managing increasing numbers of students in a standardised fashion. In this regard, the VLE can be seen as an extension of the organisational, administration and managerial concerns of the neoliberal university. In this context, we can observe a normative account of technological determinism, where technology use is driven by efficiency and productivity. Thus, ethical, and political processes are removed from the overall landscape, but this does not mean that these political processes are not at play; they are just hidden. Although US based, an interesting example that portrays the drive for efficiency and productivity where the agency is given to the technology instead of teachers and students, is the case of New York State. Andrew Cuomo (the governor of NYS until 2021) proposed a new post-pandemic model for education where the state should tear down the old education system (once again!) in which students and teachers interact in a physical classroom replacing it with a 'smart' education system, very much as Skinner did six decades ago proposing learning machines (Kuhn, 2019; Watters, 2021). To this proposal Naomi Klein has claimed that this new model of education is characterised "by 'human-less, contactless technologies', artificial intelligence, public-private partnerships, and extensive outsourcing of government functions, such

[3] https://www.ucu.org.uk/article/9037/My-workload-your-education

[4] Post-92 university is a former polytechnic or central institution in the UK that was given university status through the Further and Higher Education Act 1992

as state schooling, to Silicon Valley businesses". (Klein, 2020, Para 20; Williamson and Hogue, 2020;).

More generally in HE it is evident how people involved in teaching and learning have experienced the lack of a political account and debate about the norms by which the VLE as a technology - a platform in this case - has advanced. There has been little discussion about the values underpinning the design principles of these learning management systems, who and what is managed, how is it managed, what is the role of the student, questions about who makes those choices, which are the power relations between the stakeholders and users, what are the embedded learning theories underlying the VLE, to name a few. This lack of public political debate among academics, confirms what Bimber argued: the risk of privileging the goals of efficiency and productivity over value-based debates. This shows how in the managerial university it is very likely that the political dimension of technological design and use is overlooked, with such important discussions being subverted by a focus on productivity and efficiency. Instead, what is more common is to read accounts about the power of platforms as innovative and universal learning machines that are going to revolutionise education from as far as Silicon Valley (Watters, 2012).

The problem is not so much with platforms per se, but with the lack of public discussion around the underlying ideology and design principles of such an important piece of technology that is centrally positioned in the network of interdependencies of HEIs. As Watters argues (2012; 2021), the programmatic aspect of platforms is where the attention needs to be. She sustains, as I do, that the open web is an excellent education platform, that has opened up what Feenberg (2005) defines as, 'new forms of agency', namely, the use of technology to challenge institutional power and privileges, and in the process reconfiguring the prevailing social order. New forms of agency have opened the way for the new, mediated modes of sociality, reciprocity, participation, mobilisation, and resistance, Feenberg argues, but little of the open web and 'new forms of agency' are left for education, as Liu (2018) has contended in her different talks and essays.

Learning management systems have their role in the HE technological infrastructure, particularly when it comes to the administration duties, but the tendency in these institutions is to rely on these systems as the only digital learning environment that exists for students. Hence, they overlook what such systems impede in terms of the development of students' critical media literacies and 'new forms of agency'. One of the core limitations of these platforms (e.g. Blackboard, Teams, Canvas) as Baker and Grossman (2013) demonstrate, is that they encourage students to consume already digested content, instead of fostering the production of content to share in the bigger information commons mediated by tools that have an O+P ethos. On the other hand, a wealth of literature has shown (Williamson and Hogue, 2020; Williamson, 2017) how these platforms in recent years have become instrumental for the measurement of students' engagement and success. They prepare the grounds for data-monetisation business models in education and such developments are exactly what Srnicek and Williams (2016) warn us about. They remind us that "hegemony is embedded not only in the ideas of society but also in the build environment and technologies that surrounds us" (p. 145).

In the managerial university there is a tendency to promote the use of standardised assessments and the compulsory interaction of students with the virtual learning environment

(VLE) and its digital content, with the aim of enhancing students' experience and thus, the institution's ranks in the league tables (Ball, 2015; Selwyn, 2015; Williamson, 2015), which, as has been shown above, is deemed critical for a market-based approach to education. In such a market-based economy competition is the main mechanisms to get students and thus, become a sustainable business. In short, HEIs are partially being transformed in sites of measured performance. Selwyn (2015) warns us about the concerns over power, control and performativity that the collection of digital data through these platforms raise for the education sector. This, he argues, "reinforces and intensifies the culture of managerialisms within education" (p. 72).

In this educational landscape one thing becomes salient, i.e. the central role that learning management systems, i.e. the VLE (a data-driven system) have in the context of interdependencies of the system (the institution). This centrality of the tool is something that I have found has been overlooked in the literature, nevertheless, it is an element that shapes the practices of those involved in the institution, amongst them teachers and students. The VLE is the central piece of technology around which all the learning and teaching activities orbit. The scope of this chapter does not allow me to expand upon a more theoretical explanation about the social identity of artefacts, that is the power that technological artefact exerts over social practices, this influence over social practices in turn, shape the process of technology appropriation in those practices[5]. For the sake of this chapter, suffice it to say that Lawson (2017) demonstrates that any artefact has the capacity to enhance human capability if, and only if, they are centrally positioned (enrolled) in the context of use. In Lawson's (2017, p. 106) words, "we use technological artefacts to extend ourselves in some way (…) and at the same time considering that such extensions are always dependent on the context of interdependencies that artefacts must be inserted into in order to function." The capabilities gained using a technological artefact needs to have certain traction, power, and causal efficacy, and this can only happen if the artefact is positioned at the centre of the network of interdependencies in the system where the artefacts are to be used.

Having critically described the landscape in which students and educators find themselves, I now elaborate on the contradictions that I observe in this context and explore where potential opportunities are to foster social change.

Contradictions and opportunities regarding digital practices and culture

Contradictions describe tensions and problems, and they are positioned as a driving force for change and transformation (Il'enkov, 1977). They have the potential to enable a new object of activity to be identified and think of new courses of actions and conceptualise new activities as part of those actions. Therefore, there is potential for social change in contradictions.

Grasping the social context within which teachers and students operate can be difficult, at times, for educational institutions, and this, combined with a difficult relationship between control and innovation (Stiles and Yorke, 2007), interferes in the efforts to transform educational practices despite what the majority of the media and ed-tech big corporations

[5] For the interested reader you can look at Kuhn(2021)

wants us to believe (Cuban, 1986; 1993, 2011; Watters, 2012; 2015; 2021). Technologies in education, are "the result of social and institutional demands which technology helps to fulfil" (Pelletier, 2004, p. 1). This idea is reinforced by Weller (2016), who argued that, when thinking about the future of higher education in the next 50 years, that technological change is often a matter of cultural shift and not so much about the technology as such. In his words:

> *Take recent innovations such as e-portfolios or digital badges. The technology here is fairly robust and straightforward, but what they require to have impact is a shift in cultural attitudes from employers and learners [and institutions] regarding recognition, the format of learning and alternative accreditation. A second prediction then will be that many existing technologies will still be around, but that some of them will have developed the appropriate social structures for broad adoption, whereas others will have withered in this task.* (para: 3)[6]

In this regard, as Pelletier (2004) and Johnston, McNeill, and Smith (2018) contend, technologies and their concomitant practices are systems of cultural transmission, creating new contexts within which existing social interests express themselves, which is the case when we look at the inextricable relationship between the neoliberal ideology of the managerial university and the deployment and centrality of particular closed and monolithic digital technologies that offer efficiency and efficacy. But this choice is not inevitable, for as we are reminded by critical realists, it can always be otherwise, particularly if we acknowledge the importance of fostering agency in digital spaces, more particularly 'new forms of agency' that in Feenberg's (2005) terms can be used to,

(…) challenge established institutional power and prerogatives, and in the process reconfigure not only prevailing social order, but the technical infrastructure that supports and subtends it. New forms of agency have opened the way for the new, mediated modes of sociality, reciprocity, participation, mobilization, and resistance (p. viii).

In addition, and as Wiener (1980) would say, technologies have internal politics that are the outcome of competing agendas. Technologies have implicit in their design and implementation a particular type of social order, whereby they allow some behaviours and impede others (Matthewmann, 2011). Technologies are material structures with real existence, which, according to a critical realist ontology, means that they can exert causal influence in the context they are deployed, shaping, but never determining, social reality and most notably, its culture. This realisation brings me to the core point of this book, namely, the need for a change in HE culture.

Higher education is taking place within a rapidly changing and fluid (Bauman, 2011) society, characterised by ubiquitous connectivity, a shift from knowledge scarcity to abundance (Weller, 2011), the increased availability of open educational resources (MOOCs accessible from mobile devices and no cost), and a move from hierarchical towards networked forms of social organisation (Castells, 2000). The use of digital technologies and the world wide web have also changed how people find information, communicate with one another, make

[6] This quote is taken from Weller's blog, available from: http://blog.edtechie.net/higher-ed/learning-the-rules-of-predicting-the-future/

and sustain relationships and work collaboratively (Jenkins, 2006; Ito *et al.*, 2013; Veletsianos and Kimmons, 2012). Hence, the maps of meaning and the framework of intelligibility -culture- has changed, thus creating new situational logics or structural conditions for agents to act.

All these changes imply new social capabilities and cultural competencies - frames of intelligibility – for which Jenkins et al. (2009) hold that young people need to be full participants in what they call a convergence culture. They characterise this society as one where participatory culture is the mainstream, being defined as,

> *A participatory culture is a culture with relatively low barriers to artistic expression and civic engagement, strong support for creating and sharing creations, and some type of informal mentorship whereby experienced participants pass along knowledge to novices... members also believe their contributions matter and feel some degree of social connection with one another. (Jenkins et al., 2006, p. xi)*

Whilst the authors in their initial work referred to young people, later, they acknowledged that this is relevant to all people, not just the young. Jenkins together with other scholars (Jenkins, Ito and boyd, 2016) investigated participatory culture in an educational context, regarding how relevant it could be to learning and literacy. Jenkins, Ito and boyd (2016) advocate for embedding literacies of participatory culture more successfully in HE. This call would appear to acknowledge what Styles and Yorke (2007) argued about the difficult relationship between innovation and control, also agreed by Ito et al. (2013) who demonstrated the difficulty for HE to accommodate students' social culture within the managerial mindset of our current HE institutions. These authors have identified contradictory situational logics between the institutional culture and that where students' social life is framed, i.e. a participatory culture, where their contributions to the learning experience are included. How does this participatory culture fit into the culture of an institution that has as its central digital learning environment a platform such as a VLE that demands from students little participation in the outside world of the institution thus discouraging 'new forms of agency' (Feenberg, 2005).

Opportunities afforded by open and participatory tools

Opposed to the learning management systems such as the VLE are tools that are characterised as O+P, as I have defined at the beginning of the chapter. These tools, when inserted meaningfully in the learning experience, are considered to foster a culture of open participation, sharing, and the co-creation of knowledge aimed at contributing to the consolidation of an open society. These tools can be considered an intermediate stage between open-source tools (e.g. Linux, Mastodon) and completely closed and proprietary digital tools (e.g. Office Suite) and their use and concomitant practices have the potential to foster more sophisticated and critical digital literacies in line with the challenge's society is facing at present. My intention to integrate these O+P tools instead of pure open-source ones is because there is evidence in the literature (Selwyn, 2014) that integrating fully open-source technologies in educational setting is difficult and it has not been entirely successful yet. In addition, Helsper (2006) demonstrates in her study that despite the fact that there was a high use of open platforms in HE, there is little involvement of universities and colleges in the

modification or constructions of these products. She argues that it seems that a majority of staff turn to open technologies for economic reasons given that buying propriety software can be very expensive. In addition, open-source technologies are associated with a high level of computational skills and a culture of DIY (Do it yourself) which for many educators is felt as a burden in their already role. Therefore, I consider O+P tools are more likely to be accepted and adopted than pure open-source tools. Nevertheless, for this to happen, I remind the reader what Lawson (2017) has argued, namely that for any tool to be adopted in a socio-technical system it needs to be centrally positioned in the network of interdependencies of the system - the university in this case. Hence, for tools to be adopted they need to have a strong social identity, in addition, there is also a need for recognition (Cronin, 2017), with this I mean that the tools and its practice are recognised by the institution. This is the case with the VLE, where the institution almost always provides detailed guidelines for how to use and organise the VLE and it praises staff for doing this well. This is an incentive that shapes digital practices at the institutional level.

Two compelling examples in the educational arena of O+P tools and the concomitant practices that emerges from its use are, the initiative of A Domain of One's Own[7] (DOO), and the use of Wikipedia in the classroom, which is considered by some (Elder-Vass, 2021)[8] a concrete utopia. A Domain of One's Own employs WordPress, an open-source platform to create content, and undertake assignments, whilst at the same time students can shape their digital identity building a digital portfolio that will serve them after they finish their degree. In addition, students own their data as well as the domain they have acquired, it does not live in the university server. It is not so much that students owned something concrete (we do not own the software or the code that makes up WordPress) but what it does mean is that the platform is not build on an ideology of data extraction, outsourcing, and solely market economy principles. Instead, it relies on the open web ethos (in an idealistic sense). Namely, the web has a stake in public scholarship and public infrastructure, as Berners Lee has said in many of his talks and the work he does at the Web Foundation which main aim is to deliver a web for everyone[9]. One can parallel Berners Lee's concern about the web with the concerns about students and the use of technology and the web. Lee is preoccupied with the increasing loss of control over our data, how easy it is for misinformation to spread throughout the web, and the obscure and opaque mechanisms with which political advertising flows on the internet, to counter this, transparency and understanding is needed, Lee argues. Regarding students' reality it is true that students also have lost the control over their personal data, there is the risk when students work in isolated digital spaces as the VLE that they ignore how digital technologies work in reality, and how they can impact their lives; and that data-intensive technologies that make automated decisions need transparency and critical understanding. Working with platforms that are inserted in the web such as WordPress, affords the possibility to understand and have more control over the digital infrastructure you are using.

[7] EDUCAUSE: 7 things you should know about Domain of One's Own [online: https://library.educause.edu/resources/2019/10/7-things-you-should-know-about-a-domain-of-ones-own]

[8] This example was discussed in a keynote he gave for the Critical Realist conference in South Africa, 2021

[9] The Web Foundation: https://webfoundation.org

Another instance of the idea of DOO contextualised in Europe that addresses similar issues of student control of their data and their digital presence is the Folio framework [10]. It is an example of a student-centred learning model and tool that Quelic Berga, an assistant professor at the Open University of Catalunya (UOC), has developed. It is a reinterpretation of the academic portfolio concept that moves beyond the traditional way of recording achievements (in a course-based degree) and at the same time afford collaboration among students and serves as a platform to develop students' digital presence giving students a sense of ownership and personal development (Raffaghelli, Kuhn, & Berga, 2021), a similar idea to the DOO.

Initiatives like the ones explained above counters what Watters (2016) calls the Uberification of education in which "everything students do is trackable, extractable, and monetizable by other platforms, by private, for-profit companies." (Para 24). It is through educating our students to use such O+P tools and reflect about their politics, their design principles, that we can resist current extractive business models. As Watters (2016) contends, we can challenge how the Internet and the web work if we understand that the web and the Internet are corporate forces oriented towards a particular ideological end -privatization and profit for some and reputation and contribution to the greater good for other artefacts. A space as a DOO operates at the level of infrastructure and at the level of literacy and, as Virginia Woolf a century ago ones said, "A woman must have money and a room of her own if she is to write fiction", meaning that in order to have freedom and develop a voice in a world dominated by man (a century later this is still the case in addition of the dominance of the market), a woman need to have her own space where she feels free (Woolf, 1935, p. 5). Woolf claim is still current a century later; because in the educational space the world of technology is dominated by for-profit big tech corporations, mainly based in Silicon Valley and lead by white, middle-class men (cf. the work of Williamson[11] who has written extensively how big corporations are taking over education, in particular in America, but also in Europe). Another example of an O+P tool that is also open source is Wikipedia. The use of Wikipedia for educational purposes has served brilliantly the aim of the open education movement. It teaches students how to write for and in the web while contributing to the co-creation of knowledge in collaborative fashion that is freely available and open to improvement. It also contributes to raise awareness of how the web infrastructure operates and how data flows.

Despite the potential of such initiatives, these O+P tools are marginally positioned in the context of use in the majority of HEIs, particularly in the current managerial culture as described earlier in the chapter. It is worth mentioning that one of the difficulties of engaging with O+P technologies that are relatively new (to many practitioners in HE at least), emergent and dynamic (Veletsianos, 2016) is something that is not unique to the situation described in this chapter. New, perhaps more sophisticated practices must show their application in the practical order, before they can displace established ones (Archer, 2017) and thus, the resistance that is experienced is not merely a cognitive one of students and educators. The impact of any advancement of science is the materialisation of social and scientific development, which has a time lag, and is, therefore, indirect and delayed (Archer, 2017, pp.

[10] You can see Berga's presentation in Spanish (min 41) using this URL: https://youtu.be/6oJhfiyVmM4?t=2466 and in English using this URL: https://www.youtube.com/watch?v=KBjqVKaiW5Eu

[11] Williamson's academic blog: Codes Act in Education, available at: https://codeactsineducation.wordpress.com/

125–26).

In addition, the educational potential and use of O+P tools is still novel and for which new rules, norms, and behaviours are being developed, understood and appropriated; a different culture is in the making, and time is one key component of any cultural change where technology is involved. Nevertheless, there are other elements that come into play as well such as the competing ideologies at stake, the managerial and neoliberal ideology on the one hand, and the open and more participatory ideology on the other.

Culture in a very broad sense is the process of making meaning or making sense in the world through theories, beliefs, and ideas. These ideas and theories are developed through practice. Practices encompass both the material activity of the practice itself and the cultural activity of forming reflexive theories about practice. "People's reflexive representations of what they do are in a sense already theories" (Fairclough and Chouliaraki 1999: 26, as cited in Newman 2017). It is evident then that the practices we foster in education will form some theories and ideas in our students. I will return to this point later as it is critical to understand how open practices will contribute to a change in HE's culture. What is more, open education has a different relationship when it comes to the use and management of data, which is of interest in this chapter.

The land of Utopia: viable alternatives, 'real' possibilities for the future

As More did search for Utopia almost six centuries ago, I am in that search too, thus this chapter. More was conscious that "we made no inquiries (…) about monsters which are the routine of traveller's tales, Scylla, (…) man eating Lestrygonians and that sort of monstrosity you can hardly avoid, but to find government wisely established and sensibly ruled is not so easy" (1989:12). This resonates in current times despite the centuries that have passed since More wrote his concerns. The way that the social reality is heading given the increasing automation of important social decisions in our life, the ubiquitous surveillance we are exposed to with its concomitant consequences, the datafication of almost all dimensions of our daily life, is a testimony of governments and institutions that are far from being sensibly ruled. Instead, what it shows is how strong the market shapes government and institutional decisions, and HE is not the exception being ruled rather by market forces then by wise government (Johnston, McNeill and Smith, 2019). Therefore, it becomes imperative for us educators to imagine how can our students and institutions contribute to the construction of those wise and sensibly ruled governments that contribute to a robust democracy. Our students are amongst the possible leaders of tomorrows' institutions, thus the work we do in our teaching and learning practice is critical.

In her breath taking and poignant work, Benjamin (2019) pictures imagination as a space for action and not afterthought, and so do I. In the field of HE, Barnett (2013) argues that what is needed is "a proliferation of ideas...if only to begin to demonstrate that things could be other than they are" (p.5). I argue that digital education needs to be otherwise, and it must include a political stance, we ought to embrace it with 'political teeth'. Education, Freire (1970; 1974) argued, is a political act and it needs to be designed in consequence. To envision this political turn in the use of technology in education I find inspiration in Feenberg's work who

states that technology can also be seen as a contested field where individuals and groups can struggle to influence and change technological design, uses and meanings.

Therefore, in what follows I will describe the land of Utopia that I imagine, a land that is realisable but not yet actualised. It is a land where digital engagement is reflexive in nature and guided by political reflection and valued-based discussions concerning the nature of the tools with which we mediate part of the educational experience. Open and participatory tools are the tools that I advocate for (Kuhn, 2021). They are not all necessarily open source, some are commercial, but more likely to be guided by an ethos of sustainability and transparency, instead of ruthless extraction. Tools tend to attend to the political accounts by which they are advanced and many of the open tools are based on an ethos of sharing so that the code can be reuse, remixed, and improved by others in the community. Code in that sense, can be used as open educational resources to be remixed and shared again by students. The discursive and interpretative process out of which these tools emerge is visible and shared with other in platforms such as GitHub. These are values that we as educator want to base our curriculum and learning experience on.

If social structures (material and cultural structures) depend for their existence on the (technical) activity of agents (students) and the conception they have of those structures, then our roles as educators is to design learning interventions that embed deliberatively conceptions of O+P tools and open practices as our cultural structures. Embedding these cultural structures in our practice has the potential to explore with students the conception and principles of these tools engaging them in value-based debates instead of blindly privileging goals of efficiency and productivity. In so doing we enable students to embrace more sophisticated digital practices that include these structures with their concomitant values and norms. Open educational practices and O+P should too be an integral part of our pedagogical discourse. Talking about the social contract that we agree when using particular tools and infrastructures is an important part of our teaching practice. It is also important to consider some limitations that are implicit in every choice we make. It is not about finding the perfect tools but tools that are aligned with the values of the open movement and framed under a social justice lens (Lambert, 2018; Hodgkinson-Williams and Trotter, 2018; Bali et al. 2018). Therefore, I propose an educational land of utopia where an alternative epistemic culture of openness and fairness can emerge. A counterculture of open learning spaces is for me the ideal scenario so that O+P tools and open educational practices might serve to democratize education and allow grassroot input from the margins into the centre of our teaching practice.

In my land of Utopia, educational technology is not approached apolitically or with a blind enthusiastic attitude, instead I acknowledge what Selwyn (2014) upholds, namely that "much of the current enthusiasm for openness is (un)consciously linked to wider ideological motivations of re-engineering and reorientating the social relations of educational technologies and educational institutions", this is what could be seen with the case in New York State's education system. It is my intention with this proposal to find possible routes to craft different and less instrumental socio-technical relations within our institutions which can lead, in the midterm- to a change in HE (data and tech) culture. As I have indicated earlier in the chapter, social structures are socially produced and reproduced and they have their own material existence in social institutions, my suggestion is to deliberately design education for the elaboration of renewed cultural structures, instead of reproducing exiting ones (I recognise

this is an ideal that requires time and resources to be achieved). This will require a different engagement with digital technology use. Namely one that is reflexive in nature where students and the teacher deliberate, discern, and dedicate time to articulate the interplay between technology and power dissecting the ways that some technologies serve the interest of social domination. In so doing they are opening up the space for new imaginaries of alternative technologies, i.e, open and participatory. This in turn will require an orchestrated effort where educators and more managerial staff engage in debates concerning the redesign of the technological infrastructures. In this different infrastructure, O+P tools should move from the margins to the centre of the system's network of interdependencies. The enrolment of the tool in the context of use is highly relevant for them to be adopted in teaching and learning setting, and thus enable the enlargement of human capabilities, digital and data related, in this particular example.

In my exercise of envisioning a different future I have gone as far as to envisage one of the landmarks that this land of Utopia should include. With landmark I refer to an anatomical structure (the concentric circles) that will be used as a point of orientation in locating other material and cultural structures (O+P tools -the red dots- and a progressive and critical data culture). This will become clearer as I explain the anatomy of the structure that I am envisioning for Utopia land, which is illustrated in the figure below.

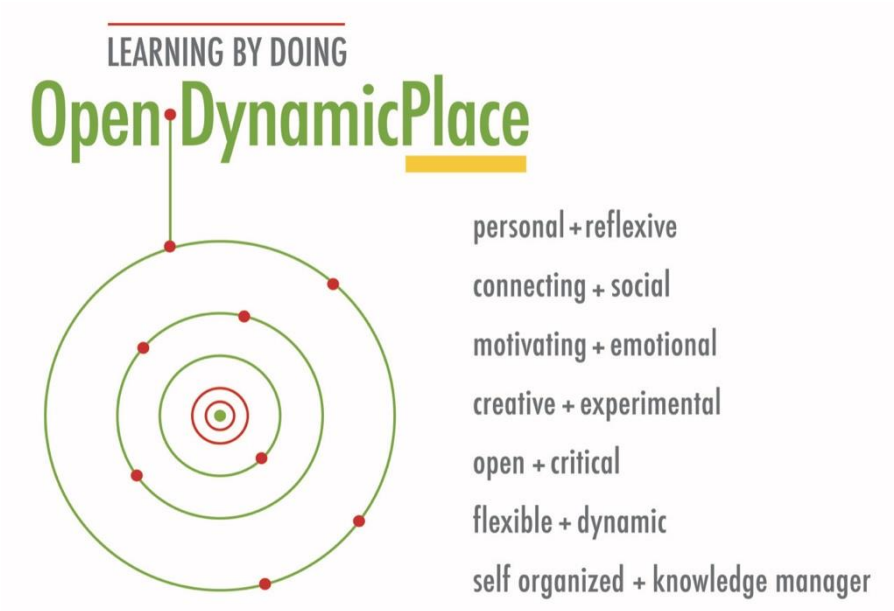

Figure 1. Open Dynamic Place (Kuhn, 2014) a partial model for open educational practices

The landmark is an open learning space, a partial model that can be built in practice as an element of the more extensive open educational experience. It is a cultural structure that emerges as the product of (educator-learner) social relations that unfold in open educational practices. The structure is made up of concentric circles that denote the learning activities to be mediated by O+P tools. The space is designed and crafted by students to mediate their learning experience as they see is needed. Hereby I am calling on Schatzberg's (2012) view of technology that is strongly opposed to an instrumental concept because he argues that instrumentalist ideas efface the role of human agency, which is exactly what this space aims to foster and encourage, i.e. 'new forms of agency' as Feenberg (2005) envisions them. These new forms of agency are likely to open the way for the new, mediated modes of sociality,

reciprocity, participation, mobilisation, and resistance as Feenberg points out. Instrumental views focus too much on 'disruptive innovation' rather than real use, treating technology like an objective force stripped of creativity and craft. But it turns out that it is precisely creativity and craft what is needed if what we envision more broadly is a holistic education which is highly valued for the (re)construction of an open society.

I am also drawing on the work of Ursula Franklin (1992) for whom technology is a set of practices in the here and now rather than an array of gadgets. "In the broadest sense of the term, the here and now is our environment, that is, all that is around us—the ever-changing overlay of nature, the built environment, the institutional and social structures within which human activities take place, as well as the activities themselves—the way things are done around here"[12]. The work of Franklin (1992) is an attempt to understand how technological practices affect the advancement of justice and peace, two critical features that any open society must have at the forefront and thus education should foster. I find her work particularly useful in times of staggering inequalities and data injustices (Kuhn, 2021a). Technology, for Franklin, involves a mindset, a way of being in the world more than anything else. And this is particularly helpful if we want not to reproduce the cultural structures of HE but to transform them. The mindset we need in a datafied society is one of activists, of rebels that understand technology as Franklin (1992) and Illich (1975) did, namely as tools for creative acts of resistance for which 'new forms of agency' will be a powerful mediator.

I envision this Open Dynamic Place as a holistic technology (Franklin, 1992), which she associates with craftwork. In her words, "artisans, be they potters, weavers, metal-smiths, or cooks, control the process of their own work from beginning to finish." Artisans may specialize in a particular kind of product, but they are always in total control of the process of production, and each thing they make or create is unique. Prescriptive technologies, on the contrary, break work down into a series of discrete, standardized steps. I firmly believe that one of the critical changes in our current HE data culture is that we all, but particularly students, should be in control of the process of production, which are slightly different from those processes in Franklin's time. Production nowadays is inextricably linked with the hyper-production of data, its concealed collection, and the behavioural products manufactured as the by-product of such practices. All of this happens covertly in the background of our daily digital practices, making them invisible to students, thus it is very hard for them to counter and resist. Technology, for Franklin, involves a mindset, a way of being in the world more than anything else. And this is particularly helpful if we want not to reproduce the cultural structures of HE but to transform them. The mindset we need in a datafied society is one of activists of rebels that understand technology as Franklin (1992), and Illich (1975) did, namely as tools for creative acts of resistance for which 'new forms of agency' will be an ideal mediator.

In a new data culture, students using holistic technologies can be in control of their data and their digital footprint whenever possible. In Franklin's view, individuals that are used to following prescriptive rules (which the VLE embodies entirely and many other big platforms also) become used to seeing control and internal compliance as normal. This control and compliance, once again, points to the erosion of 'new forms of agency' and threatens the very nature of democracy. The VLE falls under such characterization of prescriptive technology;

[12] No page provided as it is taken from her Massey Lecture in 1992

students come to believe that there is only one prescribed, predesigned way of performing different learning tasks. Franklin argues that "while we should not forget that these prescriptive technologies are often exceedingly effective and efficient, they come with an enormous social mortgage. The mortgage means that we live in a culture of compliance, that we are ever more conditioned to accept orthodoxy as normal, and to accept that there is only one way of doing 'it'." This will sound familiar to the reader despite being written thirty years ago. I envision this Open Dynamic Place as a holistic technology (Franklin, 1992), which she associates with craftwork. In her words, "artisans, be they potters, weavers, metal-smiths, or cooks, control the process of their own work from beginning to finish." Artisans may specialize in a particular kind of product, but they are always in total control of the process of production, and each thing they make or create is unique. Prescriptive technologies, on the contrary, break work down into a series of discrete, standardized steps.

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The anatomy of this holistic technology can be seen more closely in the figure below. The red nodes that are distributed within the concentric circles are activities that require technical mediation. Each node is zoomed out for more clarity.

[13] Proctoring software is based on AI that is aimed at detecting students that are cheating in online exams. For a more detailed explanation check the reference of Logan, Charles (2021) in the bibliography.

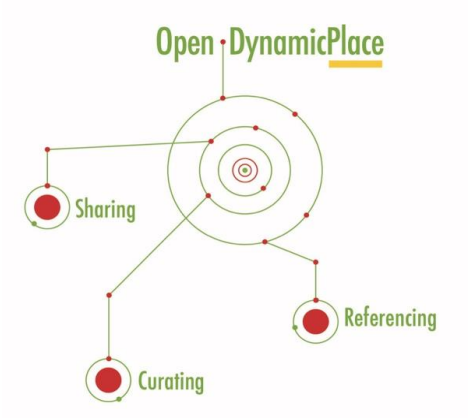

Figure 2. Zoom into the nodes of the Open Dynamic Place (Kuhn, 2021)

The idea is that in the classroom O+P digital technologies will be chosen critically to mediate each task, because I believe as Feenberg does, that technology seen not as instrumental but as guided by a valued-based discussion, namely holistically, is the very medium of political transformation, "*activity conducted in the technical sphere**, informed by extra-technical discursive factors*** [e.g. valued-based discussion]*, is the locus of political potential in modern societies."* (para 4)[14]. In short, Feenberg identifies, and so do I, technology as **the site of political praxis**. I consider that the act of choosing the tools is a political one, and as such it should be approached. We need to counter normative accounts of technological determinism (Bimber, 1991) where there is no political account of norms by which technology is advanced**.** We ought to avoid working driven by goals of efficiency or productivity because as Bimber signalled, "the goals of efficiency and productivity become surrogate for value-based debate over methods, alternatives, means, and ends" (p. 340). If we want to elaborate the existing culture in HE, we ought to engage with our students in ethical and political processes, e.g. issues of data justice (all of which are part of the extra-technical discursive factors referred in the quote above) and foreground them over alternative, means and ends. In so doing we are following Lawson's (2004) advice to take into account ethical and moral criteria so that we generate a process that responds to the larger political processes and context that is unfolding in society.

I have characterised this space using seven dyads that can be seen in Figure 1, each of which form a sociological significant relationship that serve as guiding pedagogical principles, they are:

- Personal + reflexive
- Connecting + social
- Motivational + emotional
- Creative + experimental
- Open + critical
- Flexible + dynamic
- self-organised + knowledge manager

Describing them in detail falls out of the scope of this chapter, I refer the interested reader to an earlier text (Kuhn, 2014) where I began to elaborate upon them in more detail. That paper was a first blueprint of the underlying principles of an open learning

[14] Taken from Kirkpatrick (2020) Technical Politics, Andew Feenberg's critical theory of technology.

space and educational approach, but there is more work to be done on how these seven dyads based on values and learning principles could be materialised in this Utopia Land so that more space for human flourishing is possible.

Conclusion

I started this chapter by outlining my philosophical understanding of social reality and social change in order to provide the reader with a framework to interpret my proposition. The main idea is that social change unfolds in the interplay between culture, structure and agency. I delineate my ideas for social change under a utopian thinking inspired by the work of Write, Bhaskar, LeGuin, and More, hence the structure of the chapter. Utopianism begins with a state of dissatisfaction with current states of affair, this I did by describing the state of the actual, concerning technological determinism and educational technology, and the managerial university. Two dimensions of social reality that I wish to impact upon. I then unpicked particular contradictions that emerged from the description of the social reality. This I did because contradictions are tensions between different social arrangements that offer opportunity for change. The two main contradictions identified are the current central position of the VLE in the network of interdependencies of the managerial university despite the fact that VLE does not foster the more sophisticated capabilities needed to critically engage in the co-construction of common knowledge. I then described the potential that O+P tools offer as a viable alternative to embrace HE teaching and learning design. The second contradiction identified is between control and innovation within HE. There is a difficulty for HEIs to include a more participatory culture in teaching and learning endeavours. Young people are part of a participatory culture, which mimics many of the features of the web, e.g. an open platform where sharing content, co-creating knowledge, collaborating in solving complex and wicked social problems, connecting with people globally and not only locally, is possible. In the light of these contradictions, I proposed a possible land of Utopia, how do I envision it, and what can be done to get there. For that I described in detail the potential of O+P tools and finally I described the Open Dynamic Place as the main landmark of Utopia, an open learning space that emerges as a social good from the teacher-student social relations and is crafted by students with the support of teachers. This open learning place embraces the participatory culture where young people feel more at home, at the same time, the space offers the potential to impact and elaborate on the cultural structure of the managerial university.

Utopian thought tries to establish “real freedom [where] people have actual capacities to make choices that matter to them, and this requires that they have access to the basic resources needed for acting on their plans.” (Wright 2010: 18-19). Providing students with the resources and the support they need to elaborate on their agency in digital spaces is a key responsibility we have with them so that they are able to reflexively engage with a datafied society in a manner they can resist and counter the harms that these invisible mechanisms impinge on them and entire communities.

I want to remind the reader that utopias are based on visions of the future grounded in real possibilities. Nevertheless, they are fallible and only partial models guiding practical change. Nonetheless, they are only one of the many elements of a broader educational experience. Utopias are experimental and provisional with uncertain outcomes and effects;

they are not visions of perfect final states but only a step towards human flourishing. Importantly, Importantly, Elder-Vass (2021)[15] reminds us that the world wide web began as a non-commercial space designed for cooperation with an architecture oriented to the genuine free sharing of information. This, he argues, makes projects based on this open web potential real utopias that, given the auspicious circumstances, are likely to thrive.

This idea of utopias being something realisable but not-there-yet has driven my ongoing work of thinking and envisioning how to co-design and implement such open learning spaces in which open educational practices, a fairer data culture, and 'new forms of agency' have the potential to thrive, thus learners and teachers to flourish.

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