Open, Distance, and Digital Education (ODDE): An Equity View

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Abstract

Understanding how equity manifests in open, distance, and digital education (ODDE) requires us to grapple with several coexisting trends, including the changing forms of teaching and learning provision, the advent of a post-digital society and education, the datafication of education, inequality in society at large, and digital inequities. Most of these trends are social in nature, yet they shape, and are shaped by, the educational sector. It is at the intersection of these coexisting trends that equity issues in ODDE are raised and become apparent, reinforced by the uneven distribution of technology in society, and with deep roots in economic

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and social inequities. Current scholarship foregrounds these nested relationships and entanglements, as well as their intersection with power relations and contestations which play out across ODDE at macro, meso, and micro levels.

Keywords

Inequality · Equity · Datafication · Networked learning · Unbundling · Inclusion · Parity

Introduction

Open, distance, and digital education (ODDE) has long focused on removing barriers to access learning, providing flexibility in learning provision, being student-centered, supporting students, and designing learning programs with the expectation that students can succeed (Letseka & Pitsoe, 2012). With the advent of networked digital technologies, open and distance education has become more closely connected to the notion of "networked learning," which emerged in the 1990s to describe the growing influx of technologies in the context of higher education (Jones, 2015). Dependent on connectivity, networked digital technologies enable connections, community, and many-to-many relationships. Networked learning reflects principles of critical theory (Freire, 1972) as it emphasizes active social roles and individual agency of learners and teachers (Hodgson, McConnell, & Dirckinck-Holmfeld, 2012; Jandric & Boras, 2015; Jones, 2015). Over the years, networked learning has evolved, partly due to the changing nature of digital technologies, and the types of artefacts and tools involved in learning activities (Goodyear & Carvalho, 2014). More recent approaches to networked learning promote a holistic view of learning, foregrounding 'openness and flux', and acknowledge blurred boundaries between digital and physical, formal and informal (Fawns, 2019; Goodyear, 2014; Jones, 2015); contemporary studies explore networks beyond higher education contexts, such as those involving work-based scenarios, professional development, informal settings, schools and others (Hodgson, de Laat, McConnell, & Ryberg, 2014).

Despite the decades-long notion of networked learning and ongoing discussions by distance education scholarship about the blended future of education (especially in developed countries), in 2020 many reported that the pandemic brought about a major shift in education. After the "online pivot," a global view of a postdigital future emerged, shared by developed and developing countries alike, despite the latter's relatively limited access to technology (Estefogo, Fuga, & Vendramine-Zanella, 2021; Taimni, 2021; Jayakumar, 2021). Arguably, all future forms of education will have a blended or hybrid element; curriculum provision and course design will necessarily integrate digital technologies to a greater or lesser extent. How much, when and other finer details will be determined by context, discipline, and strategy. For example, only specific programs might be able to fully accommodate time and distant separation, while others might require space for co-action and

hands-on activity. These may act as determining factors in course offerings, designs and uses. Nevertheless, there are some courses and programs that will likely (continue to) be offered as online distance education. Indeed, over the years, the online distance mode has been filling the needs of many groups of students, for example, for people living in rural areas (where they have sufficient connectivity), those studying while working or those with family commitments. The online distance mode provides opportunities of access to education to those who may find it hard to comply with physical attendance demands at a certain time and location.

Having access to education can significantly benefit both individuals and societies. Those who are well-educated have higher incomes and better health and report higher levels of well-being (OECD, 2007), but not everyone has the same opportunities to succeed or to meaningfully participate and learn. There are many complex wider issues to consider, beyond time, space or economic consideration, with multiple elements influencing the provision of equitable access to education. Educational institutions (such as schools and universities) have been historically designed to fulfil the needs of a small elite (e.g., male, white, and people of economic means), with structures, values, and practices set up to support some students while excluding and marginalizing others. Equitable societies call for more inclusive education systems, for learning environments that are designed to meet the needs of a more diverse student population, and for addressing barriers that may exclude and marginalize students from education (UNESCO, 2017). Personal and social circumstances should not prevent anyone from achieving their full potential, and so the notion of inclusive education is often used to highlight the importance of dismantling exclusion generated by inequality in society at large, particularly those related to disability, ethnicity, religion, gender, and poverty (Slee, 2011). But there are also other elements at play, such as emerging trends in education, which are changing teaching and learning practices, and the ways digital technologies are transforming living and learning in the modern world.

Equity issues in ODDE are complex and require that we locate the topic at the intersection of several overlapping dimensions. In this chapter, the analytical differentiation of these dimensions is foregrounded in Fig. 1. The figure highlights their relevance to equity on ODDE, while also expressing that these dimensions and ODDE are all largely entangled.

In relation to each dimension and its overlaps, a number of questions must be asked: which interests are served, who is advantaged, who is disadvantaged? How can educators best support students' equitable participation in networks? How can educators encourage all students to connect to others and to learning resources? How can educators and students fairly and productively contribute to knowledge building? And how can they both learn about, and embrace, wider opportunities for living and learning in postdigital societies?

Equitable participation in education means that ODDE is designed to address the challenges of co-existing issues in postdigital society which is itself inequitable, where education is being differentially datafied and digitized, and where new forms of provision are emerging.

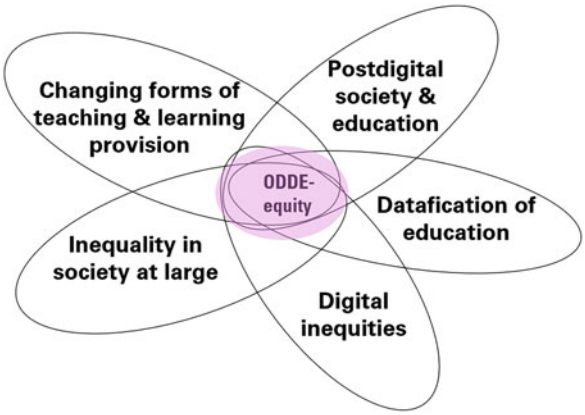

Fig. 1 ODDE equity at the center of intersecting trends

In this chapter, several terms are used including equity, equality, inclusion and justice; each derived from the literature drawn on. These terms are linked and all connote fairness but are distinguishable: equality connotes sameness or equal distribution with likely different outcomes; equity connotes appropriate or proportionate fairness; and justice is often defined as participatory parity (Fraser, 2005).

Postdigital Society and Education

There is a growing view that society can be characterized as postdigital. This does not mean that everyone has access to technology nor that people can fully participate. It rather means that technologies are so implicated in all aspects of life, that even the most disconnected are affected by the imbrication of digital practices into all aspects of society and the economy. The lines between what is considered analogue and digital are blurred (Sambuli, 2021a). Through a postdigital perspective, nothing is strictly digital nor non-digital, since anything digital is always tangled up in social and material activity (Fawns, 2019). Inversely, a non-digital life is near impossible to live, as human routines and practices involve mediation through technologies, even when people are unaware of the digital foundations and structures of life.

In this sense education can be seen as a subset of broader social practices, with the tendrils of the digital extending in different ways to different levels of the system. For universities, there is an additional layer because as knowledge producers, their roles include shaping society and influencing broader social, economic and cultural possibilities. For schools, there are tensions related to how to best prepare young generations for the future. Students need to learn skills and knowledge that will help them best address some of the complex problems facing the world, while at the same time, learn to cope with rapid technology development and to be safe amid new ways of processing and creating new knowledge (UNESCO, 2021).

A dominant framing of postdigital society has been characterized as the Fourth Industrial Revolution (4IR) represented through "a fusion of technologies that is blurring the lines between the physical, digital and biological spheres" (Schwab, 2016, p. 1). 4IR has been widely taken up by educationalists as an argument for reorganizing curriculum ranging from teaching coding in primary schools to recognizing the impact of Artificial Intelligence (AI) in education through AI literacies (Miao, Holmes, Huang, & Zhang, 2021).

While there is no disagreement about the digitalization of society (the foundation of the Third Industrial Revolution), 4IR has been criticized by reputable scholars as inequitable. Firstly, its history and very foundation is inequitable, "the first three industrial revolutions have not created a just and humane world, so why do we believe that the 4IR will do any better?" (Badat, 2020, para. 19); secondly it is predicted it will continue to contribute to ongoing inequalities "[u]nless something dramatically different is done, one of the continuities will be the perpetuation of inequality" (Gillwald, 2019, para. 11), and thirdly that 4IR will worsen inequality – "it is apparent then that a very real possibility is that advances in the 4IR could lead to an increase in . . . poverty, deepening inequalities" (Baijnath, 2021, p. 10).

To achieve equity in ODDE it is necessary to consider how to enable and support people's ability to successfully navigate and participate in a postdigital world. This dimension is also closely connected to, and impacted by, inequalities in society at large.

Inequality in Society at Large

Inequality has long been acknowledged as a major global problem clearly articulated in Sustainable Development Goal 10 (UN, 2015), which also acknowledges the extent to which the pandemic has deepened inequality both within and across countries. Inequality is relational and contextual rather than absolute; what counts as being disadvantaged will depend on what counts in a particular location. Inequalities are compound and intersectional (Helsper, 2021). This is relevant to technology because what determines access and participation is therefore fluid and changeable according to specific circumstances and needs.

Understanding the impact of broader social inequalities in ODDE is important, because historical, spatial and social positioning shape (although not determine) individual possibilities, including access to education and opportunities for digital capabilities. People without access to a range of capitals (economic, social, cultural, symbolic) are disadvantaged in ways which play out in different aspects of life including education. Inequalities also limit the opportunities that are available to people, enlarging and deepening the equity gap.

Social inequities have a profound impact on life opportunities and everyday living, therefore addressing digital inequalities in isolation can only be effective up to a certain point. This is a necessary reminder that education is a subset of broader society rather than separate from it. The pandemic exposed the extent of inequities in student bodies by removing a physical campus which could ameliorate differences through the provision of infrastructure such as residences and connectivity.

This dimension allows us to 'zoom out' to take a broader stance on equity in ODDE, much beyond the role of digital technologies in education, to look at wider issues that also influence people's ability to participate in a postdigital world. This dimension calls for a more nuanced view of how inequities are deeply ingrained in the social fabric, and how education is connected to, and impacted by, inequalities in society at large. Conversely, it is also important to 'zoom in' and to look closely at some of the ways digitization is impacting education practices.

Datafication of Education

Although measurements, audit and data have always been part of education, the embedding of networked digital technologies means the deepening of the datafication of education as all institutional, academic, staff, and student data becomes available as digital data. This has invoked serious concerns regarding the inequities of algorithmic bias, predictive policing and data harms (Marachi & Quill, 2020); the potential of AI being used for surveillance or for measuring the performance of teachers for punitive purposes (Selwyn & Gasevic, 2020); as well as the risks of datafied early-warning systems profiling students on the basis of indicators that foreground student deficits (Dhunpath & Subbaye, 2018).

In addition, digital innovations in education may cultivate hegemonic world views, thereby risking perpetuating colonialist ways of being (Sambuli, 2021b; Williamson et al., 2020; Kwet, 2019). This is achieved in several ways including through subtly delineating who makes up an ideal student or what the ideal teacher looks like. Indeed, there are no "roaming autodidacts" self-motivated, able learners simultaneously embedded in technocratic futures and disembedded from place, culture, history, and markets (McMillam Cottom, 2016); instead there are embodied humans in real lives with inequitable life chances.

Data is often understood to mean digital content, which is generally protected by privacy legislation such as South Africa's Protection of Personal Information Act (POPIA) and the European General Data Protection Regulation (GDPR). Receiving less attention is metadata, or "digital exhaust" (as per Zuboff, 2019) because it is less visible, less protected, and more opaque. Thus students' and academics' location, downloads, uploads, comments, clicks, likes, lingers, connections, logins, logouts etc. have financial value, further amplified when part of a tech company's broader ecosystem (think Google and all its products, for example). This data can then be mined and aggregated, and sold back to universities.

Questions about digital data pertain to how it is used, owned, shared, understood and made in/visible. The pandemic saw a massive growth in private companies becoming stakeholders in education; for many their business models are forms of platform or surveillance capitalism. Thus education has fed "a new elite, one based on computational power: ...as the division of learning in society shades toward the pathological, captured by a narrow priesthood of privately employed computational specialists, their privately owned machines, and the economic interests for whose sake they learn" (Zuboff, 2019, p. 190).

The confluence of these models of education, capitalism and the pandemic have brought new inequities into ODDE. Internationally, it is well-off countries which can afford to resist the power of big tech companies (see, for example, Pineau, 2021). In many nations, however, already stratified education systems become further unequal as those institutions with financial and cultural capital have more options regarding platforms, tools, and terms of engagement. These institutions are more likely to have the finances and expertise to own, build, and/or take charge of their own data and learning analytics systems. It is thus likely to be more disadvantaged institutions which have no choice but to use so-called free systems which exploit their data (see Avila, 2020 for how this can be a form of digital colonialism). Within these disadvantaged institutions, students may be categorized as "effective" or "deviant" (Selwyn, 2014, p. 52) by the pattern detection of data infrastructures, which brings about an additional form of discrimination. Finally, there is a danger in the capturing of data and how meaning can be derived from it for learning analytics because student data may not necessarily be representative of the potential of students but rather serve as an indication of the intergenerational legacy of economic and political exclusion (Prinsloo, 2018, p. 28).

Datafication in education can affect equity in ODDE, because of the vast amount of data that is constantly generated and the risk of education practices being influenced by algorithmic bias, predictive policing and data harms. It can also enable surveillance when used for measuring the performance of teachers or students for punitive or selective purposes. Datafication of education is also manifested through, and impacts on, new forms of teaching and learning.

Changing Forms of Teaching and Learning Provision

Types and modes of teaching and learning provision are both changing. Reasons for this include pressures and opportunities for flexibility, the need for cheaper studying options, reduced government funding, the digitization of society, massification with associated diverse student populations. These emergent forms of provision are explicitly linked to the 4IR, as in "With the demands and challenges of the 4IR, a move towards new flexible, often multidisciplinary curricula that move away from the traditional focus on predefined categories and types of learning is required" (Marwala, 2020, para. 13).

Unbundling

Unbundled forms of provision are generally supplied by private companies, using course curriculum content provided by (largely) public universities, with their self-described "stackable," models of learning. Some companies offer specific services to educational institutions across the entire student experience (Czerniewicz & Walji, 2019) while others such as Coursera and EdX, provide a single platform to support inter-connected forms of services and credentials.

From Coursera's IPO Filing 5 March 2021 https://www.sec.gov/Archives/edgar/data/1651562/000119312521071525/d65490ds1.htm

From https://philonedtech.com/three-charts-that-help-explain-the-2u-edx-acquisition/

Such unbundled forms of provision are critiqued for forming more uneven spaces of higher education as well as facilitating new modes of selectivity that favor privatization and commodification (Robertson & Komljenovic, 2015). In short, they risk creating a dual education system, one for the haves and one for the have-nots.

Interested in whether stackable credentials reinforce stratification, one study found that there were noticeable racial disparities in the credentials students earned through stackable credentials implemented by a consortium of community colleges in the United States (Giani & Fox, 2017). As Helsper (2021) points out, such unbundled forms of provision have the potential to exacerbate class divisions as they focus on vocational and practical forms of education, leaving elites to benefit from classic (and with higher status) liberal arts education.

Any Time, Any Space?

Prior to the pandemic, education institutions had started to actively engage with strategies that incorporated digital elements in education (Becker et al., 2017). In most developed countries, there was also a trend to alter the built environment of schools and universities in order to accommodate pedagogical innovations in teaching and learning (Benade, 2019), and thus align the contours of physical spaces to pedagogical practices that encouraged collaboration, creative thinking, and students becoming critical users of technologies. As such, many traditional classrooms were being transformed into flexible learning environments, which often involved open spaces and breakout rooms, with flexible furnishings, and infrastructure to accommodate different types of technologies. But the use of digital technologies has not been restricted to education buildings. Instead, there has also been an emphasis on new pedagogical practices with opportunities to extend learning experiences across and beyond the boundaries of the physical spaces of schools and universities. Such a trend is in line with ecological perspectives in learning, which foreground learning activity within multiple contexts, social practices and tools (Damşa, Nerland, & Andreadakis, 2019; Vartiainen, Nissinen, Pöllänen, & Vanninen, 2018). In the past decade, the materiality of elements (e.g., materials in schools, universities, home, or elsewhere) started to be perceived as contributing to ways educators and learners

interact (Woolner, 2010). Materials and their properties subtly influence learning activity, for example, through ways of arranging flexible furniture, and how the layout of open-plan classrooms and the technologies may support learning processes. All of these bring about different possibilities for how spaces can be (re) configured to accommodate different forms of curricula and social arrangements (Carvalho & Yeoman, 2018). Yet, as Thibaut (2020) remarks, internalized cultural models about how pedagogical practices ought to unfold in classrooms seem at times crystallized, encouraging the reproduction of old teaching models with new tools, and overall impacting on the creative adoption of new technologies and innovative pedagogical practices.

Recent debates surrounding flexible learning spaces also recognize that physical classroom environments may influence inclusion, as much as they may also contribute to actively excluding some students (Benade, 2019). Flexible learning spaces demand careful design, through deep considerations about the configuration of materials and spaces, pedagogical strategies, and social organization of learners that may best support the full participation and engagement of all students (Carvalho, Nicholson, Yeoman, & Thibaut, 2020). These debates have also been accompanied by new directions in policy discourse, which are shifting from issues connected to equality of access to equity of outcomes – where the focus is on preparing students for the knowledge economy. However, as Benade (2019) points out, such a shift to promotion of outcomes can also be seen as part of neoliberal agendas concerned with comparative performances under international rankings, which in turn, are more likely to symbolize a neoliberal individualistic and competitive spirit rather than express a disquiet about socially just inclusion (Kearney & Bevan-Brown, 2014).

During the pandemic, however, many of these debates on trends and innovations came to the fore in new ways. Students' attendance at schools and universities were restricted because of the need for lockdown periods, many of which were long-term. Distance learning, instead of being a choice for particular groups of students, then became the prioritized option. Discussions emerged on how to re-configure learning spaces in a world where teaching might be neither fully online nor fully on-campus, but might be able to take place in either or both modalities (Fawns, Markauskaite, Carvalho, & Goodyear, 2021). The uncertainty brought about multiple possibilities, some scenarios requiring a learning design that can accommodate both remote and on-campus students learning together. A design might also require coping with an abrupt change of location, if lockdown restrictions are suddenly imposed, and students need to stay at home for periods of time. In sum, the pandemic brought about multiple pedagogical challenges. These were felt acutely in professional education, where the learning of practical skills in collocated scenarios seems crucial (e.g., medicine), by those for whom social interactions within educational settings are most needed (e.g., primary school) and by students at all levels of the system with barriers to learning. It also brought to the fore the need for more inclusive forms of design and coherent values-based planning (see, for example, de Rosa, 2020). Universal Design for Learning (UDL) originally developed for students with disabilities rose to prominence to provide an effective framework for design which explicitly accommodates the needs and abilities of all learners in all disciplines (Arcellana-Panlilio & Dyjur, 2021).

Digital Inequities

Digital inequities are often characterized by the digital divide, commonly differentiated by order or level. The first order describes access while the second describes use. In recent years a third order describes the effects of use. Access to appropriately affordable and suitable technology and connectivity remains a major barrier, one made visible during the pandemic, when students were sent home to learn in extremely uneven conditions (Estefogo et al., 2021; Mawazo Institute, 2020; Fig. 2).

Second level divides reflect the kinds of economic, social and cultural capital which students have access to; this makes explicit the education with the barriers in broader social contexts. It is the third level which describes the impact and outcomes of access and use. Thus digital divides are not only digital but also social: "socio-digital inequalities are systematic differences between individuals from different backgrounds in the opportunities and abilities to translate digital engagement into benefits and avoid the harm that might arise from engagement with ICTs" (Helsper, 2021, p. 8).

Thus, it is clear that there are complex elements at play, connected to inequalities and social structures (Torabian, 2021).

When the COVID-19 pandemic began in early 2020, learning activities were suddenly redirected into a new mode, and concerns about people's personal circumstances were foregrounded. Access to digital devices and to connectivity for learning

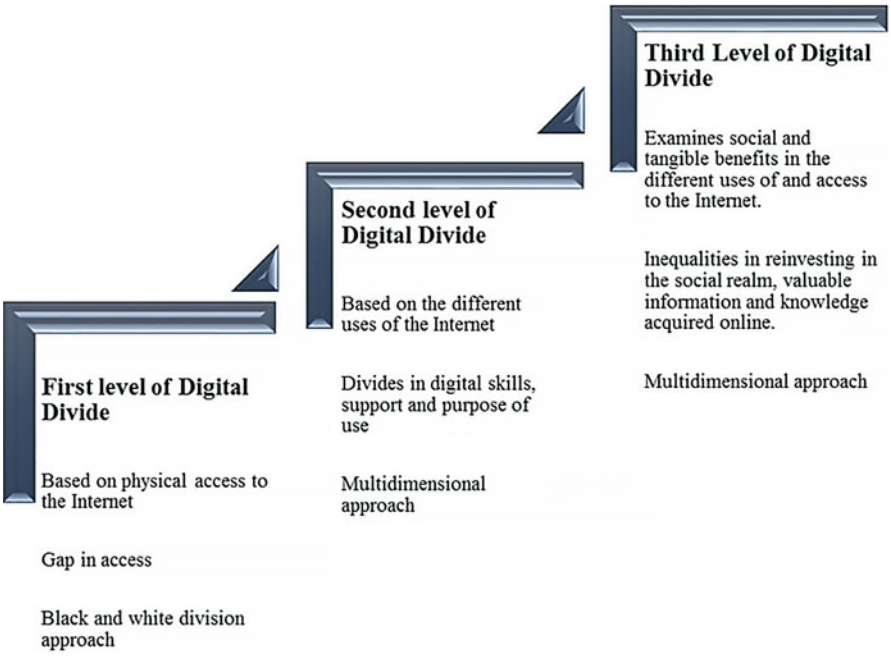

Fig. 2 The three levels of digital divide (Ragnedda, 2019, p. 35)

is extremely uneven. Across and within countries, many were disadvantaged, having no access or devices, travelling great distances for connectivity, sharing devices and being very imaginative at developing strategies for access. There were challenges associated with every level of the digital as well as a continuum of digital literacies and capabilities (Czerniewicz et al., 2020; Estefogo et al., 2021; Green, Burrow, & Carvalho, 2020).

Interdependencies Between Dimensions and Their Influence on Equity in ODDE

The six dimensions discussed above – postdigital society and education; inequality at society at large; datafication of education; changing forms of teaching and learning provision; and digital inequities each illuminate an aspect that impacts equity in ODDE. It is at the intersection of these dimensions that entangled digital inequities exist. While separating these dimensions provides a way to see a complex picture and the array of elements at play when considering equity in ODDE, their overlaps and intersections form the nexus of lived realities and opportunities for change.

The overlay of digital practices into all aspects of life, requires people's ability to navigate living and learning as part of the postdigital world. By considering ODDE as part of practices in a postdigital society and education, we invite the reader to reflect about the consequences of having digital technologies so imbricated in life and learning. We highlight the many forms of disconnection which exclude people and which are highly likely to affect those already marginal in society. However, it is important to also emphasize that this is not an isolated issue, and that inequalities in society at large also play a role. Historical, spatial and social positioning all influence people's opportunities to access education and develop the digital capabilities they need in a postdigital world.

These wider dimensions provide a backdrop for, and are connected to, a more nuanced discussion of how digitization is impacting educational practices and equity in ODDE. The digitization of educational practices have also created opportunities for, and influenced on, how educational data is used, owned, shared, understood and made in/visible. Educational data is constantly being generated and there is a risk that education practices can be negatively influenced by algorithmic bias, predictive policing, or by encouraging surveillance and performance measurement of teachers or students for punitive or selective purposes.

In addition, the increase of digitization of society, and the datafication of education, has also impacted teaching and learning provision, where an emphasis on flexibility, cheaper studying options, reduced government funding, and massification of student populations are coming to the fore. New education practices have also been linked to the 4IR, where the need to learn how to navigate the digital realm is foregrounded, including people's ability to create knowledge to solve complex issues of the contemporary world – e.g., climate change, people's displacement and refugees, to name a few.

These dimensions have also been discussed in relation to the pandemic, and its impact on recent debates on digital trends and innovations. Some perceived and referred to a shift in education practices, when students' attendance at schools and universities had to be mediated by ODDE, which instead of being a choice for particular groups of students, became the unique option during lockdown periods. Finally, a differentiation between digital inequities was discussed, going beyond physical and material means, to include digital literacy) and social aspects that are multidimensional, and yet influence how one lives and learns in postdigital societies.

In what follows we present a way of theorizing digital participation and initiatives to provide ways forward to address equity issues in ODDE through digital inclusion.

Theorizing Digital Participation

Having established that people's ability to digitally contribute and create knowledge is unevenly distributed in society, we now turn to two approaches, which can help researchers and practitioners understand and analyze these inequities: Bourdieu's theoretical framework and Sen's capability approach. Both are often used to explain and explore digital exclusion and digital participation.

Bourdieu's framework provides a way of describing digitally-mediated practices (of both educators and students) through the key concepts of "field," "habitus" and "capital." The field explains and defines the structures or systems within which individuals attempt to achieve their outcomes. It is "a structured system of social positions ... the nature of which defines the situation for their occupants" (Jenkins, 2002, p. 85). As are all fields, education is a site of struggle over resources: it is "a system of forces which exist between these positions. . . structured internally in terms of power relations" (*ibid*).

Access to all forms of capital is important because positions in the field occur in relationships of domination, subordination or equivalence to each other by virtue of the access they afford to the goods or resources (capital) which are at stake in the field. Bourdieu explains that ". . .the structure of the distribution of the different types and subtypes of capital at a given moment in time represents the immanent structure of the social world, i.e., the set of constraints, inscribed in the very reality of that world, which govern its functioning in a durable way, determining the chances of success for practices" (1986, p. 241).

There are four main forms of capital: economic, social, cultural and symbolic. Economic capital refers to assets either in the form of, or convertible to, cash. Social capital refers to the connections, social obligations and networks which advantage or disadvantage people. Who you know or don't know, and what assistance or leverage can be wrought relates to social capital. The next form, cultural capital, may occur in three states. For example, embodied cultural capital refers to "long-lasting dispositions of the mind and body" (i*bid*), expressed commonly as skills, competencies, knowledge and representations of self-image. Objectified cultural capital refers to physical objects as "cultural goods which are the trace or realization of theories or critiques of these theories" (Bourdieu mentions pictures, books, dictionaries,

instruments, machines, *ibid*). And institutional cultural capital is the formal recognition of knowledge usually in the form of educational qualifications. Finally, symbolic capital is appropriated when one of the other capitals is converted to prestige, honor, reputation, fame; symbolic capital relates to recognition, value and status. These different forms of capital are different forms of power, but the relative importance of the different forms will vary according to the field. One form of capital can be converted into another.

An important concept in Bourdieu's theoretical framing, is the notion of 'habitus', as the way that all the different constructs come together, the dynamic and shifting relationship between a particular field and capitals. Bourdieu explains that habitus is a system of durable and transposable dispositions, developed in response to determining structures. An individual's habitus is both involuntary (outside of their control) and voluntary (changeable). Habitus is about identity, about being in the world, is the intersection between structure and agency.

It is therefore clear that while individuals are able to exercise agency, that agency is socially constrained and is exercised within existing social conventions, rules, values and sanctions, negotiated specifically within the rules of the fields in which they operate.

Within this broader context, learning activity is often associated with people's abilities to make choices about what they value and what they would like to pursue in life (Poquet & De Laat, 2021). Having such ability is especially important when one's choices might be seen as curtailed by personal or existential circumstances. As such, the "capability approach" offers a humanistic approach to educational scenarios involving ODDE, because it provides a rationale for extending educational opportunities to include human development, well-being, and equity (Sen, 1985, 1992, 1999).

The capability approach (CA) is a theoretical framework that emphasizes human development over human capital, proposed by economist Amartya Sen and philosopher Martha Nussbaum (Nussbaum & Sen, 1993; Sen, 1985, 1992, 1999) . The advancement of human capability is seen as strengthening governance, through civic engagement and citizenship. In short, CA foregrounds that the freedom to achieve well-being is morally important, and that such well-being is to be understood as related to 'doings' and 'beings', or to people's capabilities and functioning. As Sen's (1985) reminds us, people should be 'free to do and achieve in pursuit of whatever goals and values he or she regards as important' (Sen, 1985, p. 203). However, in order to fully account for people's well-being, we need to look beyond the amount of resources one may be able to access, instead considering what people are able to do and be, in relation to those resources.

Essentially, CA notions of "capability," "functioning," "freedom," "conversion factors," and "agency" offer interesting lenses to help researchers and educators frame initiatives in ODDE within an equity perspective. "Capability" emphasizes that people have individual "agency" and "freedom," but such freedom must be considered within a set of opportunities that are available to them. "Conversion factors" acknowledge that awareness of the resources available to a person is not enough in order to assess their well-being; rather, it is crucial to know more

specifically about the person and their circumstances. In addition, "functioning" is seen in relation to the resources, activities, or attitudes that people may recognize as relevant or influential to achieving their goals (Comim, Qizilbash, & Alkire, 2008). Overall, CA reminds us that what people may be able to do needs to be considered within the constraints of what they have, while also emphasizing their moral right for well-being. In the context of ODDE, people need digital capabilities that go beyond access to technologies, towards being able to confidently communicate, problem-solve, maintain themselves safely online, so that they can fluently navigate our postdigital world.

Moving Forward: Foregrounding Digital Equity

Digital skills, literacies, and capabilities are undoubtedly essential for both educators and students in order to negotiate the teaching and learning experience, as well as to prepare for full social participation in a postdigital world. Enabling frameworks abound; two solidly theorized and practical frameworks are included here.

The Digital Capability Framework (JISC, 2018) was created to support discussions within organizations about the capabilities required in a digital world. There are six main elements in this framework which include (i) ICT proficiency, (ii) Information, data and media literacies, (iii) Digital creation, problem solving and innovation, (iv) Digital learning and development, (v) Digital communication, collaboration and participation and (vi) Digital identity and well-being. The first element is related to functional skills such as those connected to one's ability to use technologies (ICT proficiency) and to discern between technology use, like having fluency across various tools and understanding about their suitability to achieve given tasks (ICT productivity). The second element foregrounds the critical use of technologies through the notions of information, data and media literacies. It includes one's ability to find, evaluate, manage, curate, and share digital information; having capability to manage, access, and use digital data, and to critically use a range of digital media. The third element addresses creative production, through digital creation, research, problem-solving, and innovation. It includes capabilities connected to the design and creation of digital artefacts, the use of digital evidence to problem-solve and the ability to develop new ideas and opportunities through the digital. The fourth element is about participation through digital communication and collaboration. It includes the ability to communicate effectively in the digital realm, to contribute to group work and to participate in digital networks. The fifth element relates to one's ability to participate and benefit from learning opportunities, as well as the ability to support and facilitate other people's learning through the application of educational approaches in digitally-rich contexts. The sixth element relates to self-actualizing, through digital identity management and digital well-being. It includes one's ability to develop and project a positive digital identity and to manage one's digital reputation, to maintain personal health and safety in digital contexts.

Similar elements are also addressed in the Aotearoa New Zealand government Digital Inclusion Blueprint, a document drawing on the "Solving digital divides

together" position paper (InternetNZ, 2018), which considers connectivity as a core necessity, similar to housing, sustenance, clothing, medical care, and necessary social services. The Digital Inclusion Bluebrint Te Mahere mō te Whakaurunga Matihiko (Department of Internal Affairs, 2019) provides a framework for promoting digital inclusion and equity, based on four core elements: motivation, access, skills, and trust. Motivation is about understanding why digital learning is important, the reasons for using digital technologies and the Internet and how these can be beneficial to people, helping them to connect, learn and gain access to a broad range of resources. Access involves ensuring that everyone has opportunities to use digital devices and software, as well as a reliable connection (e.g., WiFi) to access the Internet for learning, working, and everyday living. The notion of access involves affordability, connectivity, and accessibility. The development of skills relates to having the know-how to use digital media. It includes one's ability to purposefully and meaningfully use digital technologies and the Internet. This element is closely connected to the notion of information literacy in the JISC framework, but also to the idea that technologies should not only be consumed for entertainment, but instead for creating, communicating, problem-solving, socializing, in ways that are appropriate and beneficial to people and to society. The last element in the Digital Inclusion Blueprint – trust – is connected to digital literacies, foregrounding the understanding of how to manage personal information and stay safe from scams and privacy breaches, and to be confident and resilient in digital environments.

Conclusion

This chapter has revealed how equity in ODDE is at the heart of several interdependent dimensions and practices, which existed prior to the pandemic, but have now been unavoidably illuminated and more deeply entangled. It has become evident that there is a need for deeper considerations about how technology can be used to promote connections, collaboration and participation for all, as well as how to continue to encourage productive and active learning activity within varied modes, instead of reverting to "traditional" pedagogies and lecturing mode many of which were already unsatisfactory and exclusionary.

It has also become clear that there are multiple factors impacting on learning, requiring educators' ability to design flexibility for varied future scenarios, for several modes and for a diverse student body many of whom experience barriers to learning. The need for sophisticated design is non-trivial given that it is to be achieved by an educator precariat who are themselves insecure and unevenly treated in many places together with an emerging cohort of learning designers.

Students too are being called on to perform novel tasks and develop new capabilities as they figure out how to learn under new arrangements. Their ability to do so is enmeshed in heterogeneous personal and political contexts.

Digital technologies, and indeed ODDE, must be understood as tools and practices that evolve as part of sociocultural systems, which are reflected through complex and multi-layered dimensions. There is great potential for ODDE to bring

people and different cultures together, to break down educational barriers and to foster greater participation in society. But there is also the potential for greater exclusion of those who have been already at the margins of society, deepening their lack of access to knowledge and information, making it harder for them to develop the digital capabilities they need, making it difficult for their voices to be heard, therefore perpetuating their social exclusion.

Even if educational opportunities in and around ODDE strive to promote equity through a solid grounding of values on inclusion, well-being, agency and capability development so that everyone has opportunities to contribute to our digital societies, these opportunities are also often battling other competing values, many of which reflect neoliberalism agendas that are grounded on free-market capitalism, with subtle mechanisms to maintain the control, power and status of some over others.

Researchers, educators, learners and policymakers need to come to grips with how the infiltration of technology, edtech services and new business models are leading to differentiated and inequitable systems and how institutions are reshaping the nature of what it means to be a "have-not" and a "have" in postdigital open and distance digital education. Understanding the complexity of these issues is a necessary step towards re-imagining education and building a more equitable and fair future for all.

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