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Peruzzo, Francesca; Allan, Julie

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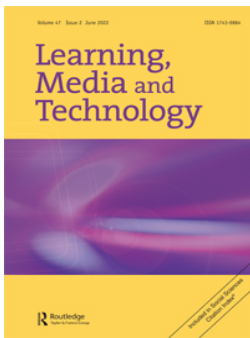
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Rethinking inclusive (digital) education: lessons from the pandemic to reconceptualise inclusion through convivial technologies

Francesca Peruzzo  and Julie Allan

Disability, Inclusion and Special Needs, University of Birmingham, Birmingham, UK

ABSTRACT

The COVID-19 pandemic and the move to remote education exposed old and new inequities, yet it also represented an opportunity to rethink inclusive education. This paper presents findings from a one-year project *DIGITAL in a time of Coronavirus* and draws upon policy analysis and interviews with teachers, principals, and community leaders from six countries in the Global North and South (Italy, England, Malaysia, Australia, United States and Chile). By mobilising education assemblage theory to challenge binary divisions (included/excluded, modern/colonial, local/global), it presents five concepts to rethink inclusion and its relationship with technologies. It illustrates how during the pandemic alternative entanglements of digital and non-digital technologies challenged narrow and Eurocentric constructions of the digital divide enabling inclusive subjective experiences. Drawing upon local possibilities and histories, re-habilitating non-scientific knowledges, especially in view of future experiences of blended education, the paper seeks to provide policy tools to rethink current understandings of inclusive education.

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Introduction

The pandemic, with its swift move to remote teaching and learning, positioned digital technologies as a frontline emergency service (Williamson, Eynon, and Potter 2020) to continue to deliver education to 99.4% of the world's student population (UNESCO 2020a). That moment of chaotic digitalisation has been addressed as the biggest digital experiment (Culpan 2020), with international organisations, edtech businesses and state governments alike rushing to describe the pandemic as both the dawn of the digital era and an unmissable opportunity to rethink education, technology and inclusion globally (UNESCO 2020b). However, digital solutions entrenched old inequities, exposing an educational digital divide (UN 2020; Reay 2020) that created new forms of exclusion and 'new (digital) vulnerabilities' (OECD 2020). The uneven participation in education due to unequal access to digital technologies hit particularly children and families from ethnic minority backgrounds, Indigenous people and those identified with Special Educational Needs and Disabilities (SEND), who struggled to access and use devices (OECD 2020; UNESCO 2020a). As a result, digital technologies were positioned at the forefront to address these emerging inequalities, renewing discourses around the necessity to enhance children's and teachers' digital skills both to thrive in

CONTACT Francesca Peruzzo  f.peruzzo@bham.ac.uk  Disability, Inclusion and Special Needs, University of Birmingham, Birmingham B15 2TT, UK

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future digital economies and contribute to a more inclusive recovery (UN 2020). Moreover, digital technologies as salvific ‘technological fix’ (Perrotta 2021, 43) were aligned to policies of ‘inclusion’ of (digitally) vulnerable and disadvantaged subjects reinvigorating a highly profitable ‘political economy of edtech’ (Williamson, Eynon, and Potter 2020, 113; Cone et al. 2021).

Scholars in the field of education technologies have long advised against technological quick-fixes of existing social, political and economic problems (Ball and Grimaldi 2021). Sancho-Gil, Pablo Rivera-Vargas, and Miño-Puigcercós (2020) remark that the digital divide is the by-product of thirty years of relentless neoliberalisation of education according to the market on global, national and subjective scales, with austerity measures, increased privatisation, and the push towards national and international competition increasingly eroding public education funding. These cuts had an inevitable effect on inclusive education programmes, whose objective was to grant equal opportunities to all children regardless their backgrounds (Allan 2008; Armstrong, Armstrong, and Spandagou 2010) and contributed to the failing of digital inclusion (Selwyn 2017), showing how well-resourced individuals ‘are likely to benefit the most from digital education’ (Selwyn et al. 2020, 2). These, as the pandemic laid bare, reproduced exclusions along the usual geographical, racialised, ableist and classist subjective lines (Bourassa 2021).

‘The resolution of the crisis’ Illich (1973, 10) comments ‘begins with a recognition of the failure’. We place this article squarely in the reflection on the ‘normality’ of educational practices and the ‘complex topological entanglement of the triptych of centre/colony, global/local and physical/digital relationships’ (Grek and Landri 2021, 394; Moyo 2017). We envisage the chaos of the pandemic as a creative moment to rethink modalities of government through digital and non-digital technologies in convivial ways (Illich 1973; Wise and Noble 2016; Gilroy 2004). We illustrate findings from a one-year qualitative study (2021–2022), the DIGITAL (*Diversifying inclusion and Growth: Inspiring Technologies for Accessible Learning*) in a time of Coronavirus project, that through analyses of international policy documents, national and local guidelines, pedagogical content, and 27 semi-structured interviews with principals, teachers, teacher assistants, inclusion managers and community leaders explored online and offline pedagogical strategies of enacting inclusion in six countries (Italy, England, Australia, the US, Malaysia, and Chile). By putting to work education assemblage theory (Youdell 2015; Thompson, Sellar, and Buchanan 2021) we present five context-based and globally interdependent analytical concepts (Deleuze and Guattari 2020) to rethink current understandings of inclusion and its relationship with digital technologies, to challenge binary divisions of included/excluded, vulnerable/non-vulnerable subjects, modern/colonial, local/global, and to enable inclusive subjective experiences and becomings (De Lissovoy 2010; Santos 2018).

In a world of shifting power relations between the Global South and North, this paper contributes to the scholarship of critical studies of inclusion and technologies by providing alternatives to hegemonic uses of digital technologies. It seeks to interrupt the discursive reformulation of exclusions and vulnerabilities in the digital era along racist, ableist and colonial social descriptors and rehabilitate non-scientific knowledges, local histories and expertise for a future in which digital ‘technologies are likely to grow in significance pedagogically, politically and economically’ (Castañeda and Williamson 2021, 1).

A predictable crisis: neoliberalism, and the failures of (digital) inclusion

Discourses of inclusion and inclusive recovery need to be located ‘in the broader political economy of the COVID-19 pandemic, its antecedents, and long-term consequences’ (Williamson, Eynon, and Potter 2020, 109). Inclusion emerged as a policy strategy in the aftermath of the Second World War, when political and economic equilibria between Global South and North were being adjusted by the end of colonialism and the emergence of globalisation (Armstrong, Armstrong, and Spandagou 2010). To deal with increased multicultural diversity (Gilroy 2004), discourses around inclusive programmes began to emerge in the Global North, to manage continuing contradictions between education policy and practice ‘in societies that were highly diversified internally

and yet globally interconnected’ (Armstrong, Armstrong, and Spandagou 2010, 4). Projects of inclusion were meant to challenge exclusions of students along biological and social markers, supporting schools, teachers and communities in transforming school practices in celebration of social diversity. Inclusive education requires that children should be not required to fit into existing (Global North) education structures and dominant norms (Allan 2008), promoting accessibility and plurality in pedagogy and curricula (Allan 2008; Ladson-Billings 2021), and active participation of children and parents in educational matters. Digital technologies entered the discourse of inclusion as access equalisers, assisting and supporting SEND students’ participation in the classroom to improve learning results (Sancho-Gil, Pablo Rivera-Vargas, and Miño-Puigcercós 2020).

Projects of (digital) inclusion are closely related to social, economic, political and technical contexts (Castañeda and Williamson 2021). In the last thirty years, a neoliberal market-driven agenda, based on competition and performativity, weakened the welfare state, and favoured processes of privatisation, ‘making multinational corporations increasingly prominent in orchestrating the integration of digital technology in education’ (Sancho-Gil, Pablo Rivera-Vargas, and Miño-Puigcercós 2020, 62), particularly those based in the Northern part of the world. Its individualising nature relentlessly produced winners and losers; and while inciting winners ‘in a constant process of capital accumulation innovation, consumerism and progress’ (Sancho-Gil, Pablo Rivera-Vargas, and Miño-Puigcercós 2020, 63), it continued to try to fix the losers in the hope of making them productive enough for (and included in) the global competition. This is a recursive and discursive mechanism constitutive of the narrative of progress intrinsic of liberal thinking, which relies on a linear idea of history and places betterment in an immaterial future (Santos 2018).

Bourassa (2021, 254) encapsulates these entanglements between neoliberalism and inclusion by describing the latter as ‘a number of mechanisms that operate by absorbing, coopting, channelling, extracting and appropriating that which has previously been deemed abject and outside – even antagonistic to – the logic of capital, and enlisting it within the circuits of capitalist accumulation’. During the pandemic, this binary system of thought, foundational of Western thinking, exposed the intersection of inclusion, digital divide and neoliberalism. As UNESCO (2020a, 5) maintains, ‘the Covid-19 pandemic has added new layers of exclusion related to accessibility of distance learning opportunities, which also affect new categories of the population’. These layers dichotomously sifted the productive digitally advanced from the potentially productive digitally vulnerable, simultaneously producing respectively the normal and the Other subjects of the digital era (Bourassa 2021; Santos 2020). These discursive processes not only exposed the material complicity of programmes of digital inclusion in (re)producing certain subjects as excluded while subsequently aiming to include them, but also opened ontological possibilities for collaborations between the public and private sectors ‘in securing the resources to provide those devices and connectivity’ (OECD 2020, 5).

These normative lines emerged through the use of digital technologies to continue school education remotely, with those children from more wealthy backgrounds benefitting the most from the shift, with able children more likely to continue to engage with learning (and to go back to school post-lockdown) (Reay 2020; UNESCO 2020a), and countries in the Global South or in rural areas more likely to find themselves at a digital disadvantage (OECD 2020).

Currently, we live in a world in which organisations and institutions in the Global North decide the terms of inclusion and export a digital thinking that reinforces the Global South technological dependency (Moyo 2017). As Santos (2020, 22) puts it ‘[as a result of] having been expelled from the political system, the alternatives will enter each time more frequently in citizens’ lives, and they will do it through the back door of pandemic crises, environmental disasters and financial collapses’. In the next section, we present some analytical tools to make space for such alternatives and to envisage how inclusion can be practised in ‘education in a digital world’ (Macgilchrist, Allert, and Bruch 2020, 76) which encloses ‘visions of social futures outside or beyond neoliberalism’ (Slater 2015, 2) and its colonial premises (De Lissovoy 2010).

Education assemblages, technologies and conviviality for inclusion

The DIGITAL Project mobilises three interconnected bodies of knowledge to analyse the epistemological and ontological dynamics around neoliberalism, inclusion and technologies: Deleuze and Guattari's assemblage theory and inclusive pedagogies; critical approaches to technologies as tools of government; and conviviality and its implications for decolonial approaches in education. First, we use the notion of assemblage to explore both the global dimension of education policy and politics during the pandemic and local inclusive teaching and learning practices between online and offline spaces. Assemblages are dispositions of things, constituted of lines that connect and productively interplay heterogeneous components including political orientations, institutional arrangements, formal and informal knowledges, subjectivities, pedagogies, and affects (Youdell 2015). Thompson and Cook (2015, 732) describe them as 'topological spaces', 'surfaces that are spaces in themselves and ... their self-organization brings being and knowing, ontology and epistemology, into new kinds of relations' (Lury et al. 2012, in Thompson and Cook 2015, 732).

They can be described as acentric nonhierarchical networks, criss-crossed by three kinds of lines. First, molar lines, which are 'binary, arborescent and striated' (Deleuze and Guattari 2020, 587) constituted by normative and disciplinary spaces (Allan 2008). Second, molecular lines, which enable multiplicities, smooth places and flows (Deleuze and Guattari 2020). And third, lines of flight, which open for processes of becoming and deterritorialise assemblages to spaces of multiplicity that challenge the premises of the inclusive project in its dualistic inclusion/exclusion dimension (Bourassa 2021). These three kinds of lines make visible, select, order and unstably connect the elements of the assemblage, in relations that Deleuze and Guattari (2020, 2) describe as 'machinic', that is 'the idea that assemblages have both structure and random connectedness' (Thompson and Cook 2015, 733). Here planes of consistency define the fleeting stability of certain connections, they are 'a grid' (Deleuze and Guattari 2020, 7) that allows certain forms of experiences, enabled and disabled at the same time 'by lines of flights or deterritorializations according to which they change in nature and connect with other multiplicities' (Deleuze and Guattari 2020, 7).

Hence the assemblage always shifts between territorialisations, deterritorialisations and reterritorialisations, 'always in the process of coming together ... just as it is always also potentially pulling apart' (McCann and Ward 2012, in Savage 2020, 326).

However, assemblages always find new territorialisations, such as the digital divide. To avoid discursive reproduction of inequities, we use Deleuze's idea of 'concept' to treat reterritorialisations not as returns to unequal territories, but rather as 'differential relations internal to deterritorialization itself' (Deleuze and Guattari 2020, 592). Deleuze's concepts are active connectors, creating an order (Colebrooke 2002) that eschews normalising and prescriptive uses of technologies, are 'vectors', 'acts immersed in a changing state of things' (Massumi 2020, xi), 'not amenable to dictionary style definitions, for their power lies in being open and expansive' (Colebrooke 2002, 17). Therefore first, by *making order*, concepts can become tools to address the political, economic, social, and historical 'messiness' of technology and education (Selwyn 2017), thus connecting local and contingent experiences with global dynamics (Thompson, Sellar, and Buchanan 2021). Second, they can move beyond the thinking of difference typical of the Western thought that constructs the Other through dichotomies that repress difference (De Lissoyoy 2010; Mignolo 2011; Peruzzo 2021). Deleuze's concepts actively create difference as politics based on an acceptance of multiplicity, they 'ride difference' (Massumi 2020, xi) rather than logics of binarism. Third, they enable new forms of experience that rely on points of rupture rather than striated and hierarchical knowledges described by molar lines (Allan 2008).

However, to expand subjective experiences and allow for alternative instances of inclusion in increasingly globally interconnected education systems, technologies need to be rethought so to 'affirm radical and autonomous political responses of communities regularly targeted by neoliberal crises' (Slater 2015, 2). The notion of 'digital technologies' here is highly problematic, first because it places immediately certain social groups in a condition of disadvantage (Selwyn 2017; Santos 2020);

second because they are usually framed instrumentally by government and corporate thinking (Williamson, Eynon, and Potter 2020); third they are underpinned by the Eurocentric project of Modernity that ‘systematically disregards thousands of years’ history of humanity, civilisation and the continuous development of systematic techniques for making and doing things’ (Sancho-Gil, Pablo Rivera-Vargas, and Miño-Puigcercós 2020, 62), in particular forms of non-scientific knowledges and education practices in the Global South (Santos 2018).

We consider technologies both in their digital and non-digital conformation, and understand them not ‘in their functional value, (“what works”)’ (Perrotta 2021, 44), rather as material conformations of power that allow for certain dispositions of things, affects, thoughts, and conducts of subjects within education assemblages. We re-imagine them ‘along collectively-organised – rather than self-regulated – lines’ (Selwyn and Jandric 2020, 1004) as forms of government of communities, individuals and selves (Foucault 1982). We expand their definition to comprise technical assemblages of means, techniques and institutions (Rose 1999), following Illich (1973, 34) in maintaining how ‘school curricula or marriage laws are no less purposely shaped social devices than road networks’. Thus, technologies are dispositions for government within the education assemblage that we mobilise to foster conviviality (Selwyn et al. 2020; Macgilchrist, Allert, and Bruch 2020). Illich (1973, 24) defined conviviality as ‘autonomous and creative intercourse among persons, and ... their environment’, and he highlighted the ‘intrinsic ethical value’ of ‘individual freedom realized in personal interdependence’, in contrast with situations in which individuals are conditioned by demands and requirements of others. Conviviality is concerned with the ‘nature of the interaction itself, rather than “more structurally-oriented explanation of social order”’ (Wise and Noble 2016, 424), a philosophy of living together that challenges the individualism and performativity of the neoliberal reason with its fast-paced and extractivist objectives. Here technologies in their digital and non-digital forms are means for convivial government, not super-imposed nor designed with profitability in mind (Illich 1973), rather with a view to a more equitable, participatory, and democratic society oriented to degrowth (Vetter 2018). Their ontological dimension enables a decentring of the digital subject by interrupting striated, racialised, ableist Eurocentric molar lines of progress that incite ‘the survival of the fittest’ (Boisvert 2010, 60) and the production of vulnerable subjectivities. In a present in which neo-colonial discourses have seen the Global South being re-produced as non-digital, late-comer (De Lissovoy 2010), rural and ‘underdeveloped’ (Moyo 2017), convivial government through technologies allow to capture the lines of flight materialised by fleeting feelings of togetherness and solidarity emerged during the pandemic. Their re-territorialisation enables new concepts to capture alternative modalities of doing inclusive education as ‘practices of inhabiting diversity’ (Wise and Noble 2016, 425), to explore ‘co-habitation and interaction’, and mix Western and Non-western components to problematise ‘ever-expanding imperial universals’ (Gilroy 2004, xi-ii). In the next section, we introduce the methods used to single out certain ‘education alternatives’ in the six countries we explored, which enabled us to identify five concepts that qualify a convivial use of technologies towards inclusive education assemblages.

The research project

The study deployed three sets of analytical methods at different scales (global, national and local) across the six countries. We first analysed the dominant discourses around digital solutions for an inclusive recovery and to tackle the digital divide, through policy briefings and reports produced by influential international organisations (including OCED, UNESCO, and UNICEF). Whilst this is a constitutive part of the project, in this article for reasons of space we focus on the second part of the analysis, on the practices that challenged dominant discourses around digital technologies and inclusion. To single out such practices, we contacted gatekeepers working in schools and universities, and experts collaborating with international organisations, asking for inside-knowledge in identifying instances which exhibited inclusive practices during the pandemic mobilising pedagogies that used both digital and non-digital technologies. With their insights, we became in contact

with six schools and organisations, one for each country, including a small primary school in Tasmania, a small comprehensive academy in Kuala Lumpur in Malaysia, an organisation supporting and collaborating with public schools in the South of Italy, an arts-based primary school in the Centre of Chile; a state primary school in a remote area in the north of England, and a state school in Massachusetts. Upon approval of the research project by the Humanities and Social Sciences Ethical Review Committee at the University of Birmingham, we contacted school principals, teachers, and community leaders and conducted 27 semi-structured online interviews with teachers, teacher assistants, inclusion managers, parents and community leaders and collected material from their pedagogic practices during the pandemic.

We structured interview questions so to enable reflections on situations and events in which the interviewees intersected digital and non-digital technologies in ways that reached all children. We then deployed situational analysis (Clarke, Friese, and Washburn 2015) as an operational technique to analyse the connections between technologies, pedagogic material, interviewees' accounts, and school policies. We used paper and pen as non-digital technologies to draw maps and visualise 'planes of consistency' as surfaces that order the elements and their overlapping and continuously deforming connections. In these maps, we eschewed 'molar lines', the ones that reproduce a disciplinary and exclusionary normality, and followed 'molecular lines', exploring where education communities attempted to 'organise schools, classrooms and pedagogies not predicted on prior assessment of "abilities"' (Youdell 2015, 112) or backgrounds in their deployment of technologies, and lines of flights, that open for becomings and deterritorialisations. Through Scrivener, a qualitative data analysis software, we systematised the analysis by thematically grouping the planes of consistency, which enabled the concepts to emerge and account for the multiplicities enabled by the assemblage (Thompson, Sellar, and Buchanan 2021).

The excerpts we present in the article have been chosen among others as emblematic of such planes and concepts, in that they capture spaces of structure and lines of flight, making visible the connections emerging from the data. They give account to the 'alternatives' to molar and disciplinary solutions that during the pandemic reproduced new forms of digital vulnerabilities and exclusions, operating 'under the mainstream radar' (Macgilchrist, Allert, and Bruch 2020, 86), ordinary but 'topical and illustrative' (Ball and Grimaldi 2021, 1) examples of how 'inclusion worked to limit and effectively reconstitute politics' (Gilroy 2004, 8). These concepts are qualifiers of inclusive education assemblages, they open connections and allow for a convivial government through the encounter of digital and non-digital technologies and subjective multiplicities following lines of flights and becomings. We present these in the next section.

Convivial technologies for education assemblages: five concepts for inclusive education

In this section, we present the five concepts emerging from data analysis. Each of these concepts is described by two planes of consistency that produce certain orientations for thinking and practising inclusive education and enabled multiple subjective possibilities through the rhizomatic disposition of elements within education assemblages in the six instances.

Accessibility

When related to inclusion and technologies, accessibility generally involves the removal of physical barriers to enable participation of all children to processes of learning, in terms of physical access to technologies (UNESCO 2020a; OECD 2020); reasonable accommodation of pedagogies and delivery of curricula through compensatory and dispensatory measures for disabled children (UNESCO 2020a), or adaptation of 'the learning experience to suit students' personal learning styles' (OECD 2020). Here accessibility convivially connects technologies in inclusive education assemblages along

two planes of experiences: (i) enabling access through all senses and (ii) through mastering technologies.

Enabling access through all senses

A convivial dimension of technologies enables accessibility through a pedagogical approach to all-senses learning as exemplified by an artista-educadora, teacher of arts and installations in a small school in the centre of Chile:

... I was looking for something to touch, listen, and that [makes] you move. And also something to create with your hands. I remembered that through the theremin you can draw lines [in the air] with your hand and create sound through this movement ... I was telling [the students] that this is like a magical instrument because you don't have to touch it, but you can listen to the music and draw lines in the air, so they were like more than their hand and ... Then I asked them to use a piece of wood and paint while following the sound doing straight and curved lines and they were making this massive painting following the music and imagining it was a straight or curve line and they were doing all this online, you know. In their own houses.

By deterritorialising the concept of access through technologies, here the artista-educadora enables pupils to be included through a pedagogy of senses, taking seriously the idea that 'knowing is a corporeal activity potentially mobilizing the five senses', and questioning Global North mind-centred pedagogies (Santos 2018). She creates access to 'magical' experiences in a space that connects online teaching and non-digital technologies (theremin, paint, wood) through physical lines (in the air) and non-physical waves (sound), she mixes scientific with magical knowledges, transforming performativity into imagination, and enabling multisensorial learning that transcends normed and ableist subjectivities. Here accessibility through technologies is enabled and mediated by all senses, through a pedagogy that elicits a process of becoming included that eschews binarism and pertains to subjects and objects alike.

Mastering technologies

A teacher at primary school in Massachusetts provides an alternative to 'the prevalent forms of high-tech behaviourism' (Selwyn et al. 2020, 3) promoted by edtech companies, and enables lines of flight towards inclusive assemblages where students shape their self-government through mastering technologies.

... It was amazing to see how quickly kids learn anything ... By the end of the school year, their big thing was like 'can we be host' so like we can power, 'hosts' in the same way that they might say that in the physical classroom with another powerful role ...

Illich (1973, 34) maintains that the more individuals can master their tools, the more they 'can invest the world with [their] meaning'. 'Being made host' implies students being given the opportunity to foster their abilities to take ownership of their process of learning, transgressing the being recipients of technologies, 'privileg[ing] their own desires over needs that professionals have constructed for them' (Allan 2013, 292). Here inclusion is a process enabled *by* the children, through a 'pedagogy of possibility', which makes accessible 'educational arrangements that favour self-initiated, self-chosen learning, and that relegate programmed teaching to limited, clearly specified occasions' (Illich 1973, 75–76). This requires teachers' trust to make connections, believing 'that something may come out, though one is not yet completely sure what' (Rajchman 2001, 7) and horizontalising power relations within the classroom to enable children to become hosts of their own subjective experiences.

Affectivity

During the pandemic, most online approaches tended to replicate classroom-based inclusive pedagogies (Ladson-Billings 2021) most of them unsuccessfully (i.e., children rejecting digital pedagogies, not taking part in online activities or not turning their cameras on). By conceptualising digital

inclusion as ‘monitoring’ (UNESCO 2020b) ‘vulnerable’ children’s learning continuity and surveilling those that need extra support (such as children identified as SEND), these approaches exposed the nature of (digital) inclusion as a series of adjustments to traditional disciplinary schooling, seeking to ‘minimise learning loss and emotional stress’ (UN 2020, 42). A convivial use of technologies deterritorialises disciplinary and hierarchical pedagogies through affect, intended as ‘sensible experiences in their singularity liberated from organising systems of representation’ (Colebrooke 2002, 22). We identified love and resilience as affects of inclusive assemblage.

Deterritorialising through love

Here the Italian educator describes love as affect to govern and enable digital subjective experiences that defy control and hierarchical teacher-student relations.

A teacher should realise that a good relationship [with students] is the only possible control ... all police-type control systems don’t work, you can control a person if you love them, you can’t control them if you haven’t established an empathic relationship. Technologies are communication platforms that serve to expand existing relations ... there must be a pre-existing relation otherwise they don’t work.

A convivial government through technologies reshapes inclusion by intensifying affect, intertwining remote teaching and learning practices with love. Here love is intended as open as possible (Deleuze and Guattari 2020); De Lissoy (2010, 289) frames it as ‘lovingness ... as basic *negation* of the system of domination, rather than a modulation of its conditions’. Its affective politics both defies the forms of control that technologies are exercising in the present capitalism of surveillance (Zuboff 2019; Deleuze 1990) and decentres the striated, binary categorising of the abnormal body in the classroom. Affectivity as a convivial dimension of technologies provokes lines of flight from a definition of inclusion that adjusts and controls bodies to new forms of experience and becomings, through ‘forms of love that are not yet given, that are not actual but virtual’ (Colebrooke 2002, 17).

Reterritorialising through resilience

The account of the principal from a small school in Tasmania illustrates how a convivial use of technologies mobilises resilience as an affective component of inclusive assemblages.

Our kids are really resilient. I’m sure there were some challenges behind, engaging and learning in a home environment could be quite challenging, particularly for early learners ... you’ve got the isolation from friendships ... We have a few families with just one child, so you’re just on your own with mom and dad or mom or dad ... Coming back to school, we expected to have a little of anxiety, a little of a disconnect happening, but most kids were just really relieved to be back on site and to be kids and do what would usually happen and ‘Oh actually the world’s okay, this is my part of the world and look it’s fine’ ... we haven’t noticed a huge amount of lingering.

A convivial government through technologies deterritorialises resilience as character building in response to foreseeable risks that create emotional and psychological vulnerabilities, or as an attribute that ‘vulnerable’ children should develop as more likely to be less digitally skilled. Here resilience decouples technologies from learning loss and deficit understanding of remote/rural communities and re-territorialises them through affects exactly by those deemed to be corrected, enabling inclusive experiences across digital and physical communities of support. Here technologies mobilise inclusive education assemblages as experiences for becoming-together ‘through human relationships and connections’ (Langer 2015, 281) that eschew neoliberal individualist dynamics and pre-exist, survive, and dissolve, the digital divide.

Presentness

The pandemic has been characterised by a narrative of progress building on the neoliberal regenerative nature of capital. First, it connected inclusion with effectively supporting catching-up activities to address the curricular learning loss occurred during the pandemic. Second, it aligned inclusion with ‘more scientific understanding and better technology’ to address existing

exclusionary problems, simultaneously feeding consumerism and obsolescence and imposing ‘compulsory innovation on the entire society’ (Illich 1973, 8–73). A convivial government through technologies instead is mobilised by a concept of presentness, that enables planes of experiences that both decentre the fixed and arboreal nature of the school curriculum and make the present a learning experience, thus stopping an extractivist notion of progress.

Addressing the present condition

The Italian educator illustrates a programme that he coordinated during the first lockdown to defy fixed curricula and learning loss and mobilise conviviality for inclusion.

... We called this project the Coronauts, [which are] a cast of the Argonauts. We didn’t say we’ve wait until we have defeated the virus, we said ‘we must sail in the sea of coronavirus’ ... it’s the first time that we find ourselves in a situation where the whole world is involved in the same thing, and this is very important, because it helps us reflect that it’s no longer domestic but willy-nilly a global reflection, we must learn to navigate inside the pandemic, inside the discomfort, because if we don’t do this we don’t learn anything. The Coronauts was the idea that we had to enrich ourselves from this shared experience.

Here presentness characterises a convivial government through technologies in two ways. First, it enables the problematisation of the pandemic through a critique of the present, infusing the curriculum with the lived immediacy of the virus, and its social, political, environmental, economic effects on subjective and collective experiences. By turning the Argonauts, Greek mythological explorers, into the Coronauts, the educator turned his students into rhizomic navigators of the global and local nature of the virus, rowing in the opposite direction of learning loss, neoliberal progress and their entanglements with an edtech industry more fixated on the ‘state of the art’, and far less often interested in the ‘state of the actual’ (Selwyn and Jandric 2020, 1000). Second, presentness as ‘making present’ and ‘turning absent subjects into present subjects’ (Santos 2018, 2). Convivial technologies mobilise inclusive assemblages by making present and participant subjects that an immobile curriculum constructs as behind and subaltern (Mignolo 2011). By critically informing the curriculum with dynamics that underpin the present condition, they open up lines of flight for individual, social and global transformation.

Disrupting the neoliberal logic of accumulation

Here a teacher from England describes how they enabled subjective becomings and pedagogical creativity through free resources, eschewing a logic of capitalist accumulation and favouring redistribution of goods and knowledge:

... We wanted to find a way to be in control and not buy off-the-shelf models to manage our tablets. There are between 150 and 200 apps that we regularly use with our students, but only two that we pay for ... we look to find free applications because a license for every device is a huge cost, but first of all ... We would’ve given up some of our control and autonomy by engaging with off-the-shelf products ... So, if they change the parameters, we can just leave and do something different, we’ll find another way.

The teacher rejects the constant re-proposition of off-the-shelves digital modalities of organising learning that both normalise the act of giving away learning autonomy, and seamlessly intertwine public, private and profit in thinking pedagogical practices (Ball and Grimaldi 2021). Ready to ‘find another way’, here ‘repetition is not the recurrence of the same old thing over and over again; to repeat something is to begin again, to renew, to question, and to refuse remaining the same’ (Colebrook 2002, 8). Here presentness is a concept that de-couples local realities from Global (North) edtech companies’ logics of ‘development’, progress and accumulation (Santos 2018). It enables inclusion through context-based decisions that repeat and reinforce education as a public common good (Selwyn and Jandric 2020; De Lissovoy 2010) through a convivial and democratic use of technologies.

Interdependency

The pandemic laid bare the individualising and competitive working of neoliberalism in multiple ways. First, it exposed Western neoliberal understandings of inclusion which capitalise on educational support (Reay 2020) and commodify kinships. Second, it reproduced forms of neo-colonial digital dependence by individually ranking countries according to the development of their digital connections (see OECD 2021). A convivial government through technologies materialised inclusive education assemblages by mobilising interdependency as a concept, enabling school communities to rediscover the value of depending on each other; and establishing connections on a global level that acknowledged mutual learning across countries that merged digital and non-digital strategies.

Horizontalising school communities

A convivial use of technologies relies on interdependence and solidarity as inclusive connectors of the ecological fabric of school communities. The principal of a small school in Malaysia describes how such inclusive lines materialised in her school:

... We said to parents ‘at the end of the day, it’s about the child’. So it’s not teachers versus parents, ‘we’re all doing our best for the children, so we need your help to work hand in hand’. So we gave them the name co-teachers ... at that time lockdown was very strict so we really needed their help ... We had to make sure that everybody had the tools they needed to teach so it was tough in the beginning ... the team did a lot of sharing and I think that’s what saved us because some of us are stronger, some of us not so, so they were helping each other.

The interruption of the school routine uncovered new forms of interdependence through technologies, both between schools and families (the co-teachers here), whose knowledge was recognised as indispensable to support children’s education at home (Reay 2020), and between teachers. Forms of interdependent collaboration across school teaching staff enabled epistemic and ontological possibilities that moved away from a competitive and individualistic neoliberal paradigm. Illich (1973, 13) talked about ‘austerity’ as a positive virtue, which despoils social systems of the material scaffolding ‘distracting from or destructive of personal relatedness’. Deleuze and Guattari (2020, 115) define this operation as ‘creative subtraction’, an element of deterritorialisation ‘particularly helpful in achieving a recalibration towards the negative that is also creative’ (Allan 2013, 50). ‘Societies in which most people depend for most of their goods and services on the personal whim, kindness, or skill of another are called “underdeveloped”’, Illich remarks (1973, 25), ‘while those in which living has been transformed into a process of ordering from an all-encompassing store catalogue are called “advanced”’. A convivial use of technologies makes interdependence indispensable to activate inclusive processes of teaching and learning (Peruzzo 2021), and dissolves the digital divide in kinship and support across horizontal school communities, validating solidary relations mostly treasured by Global South cultures and ways of living,

Enabling global (decolonial) connections

Convivial technologies foster inclusive practices by enabling genealogical connections between colonial power, children’s voices and global educational justice, as exemplified by the Italian educator in a project implemented during the first lockdown.

... Today with technologies I can both mark up the [whole] world and the neighbouring territory, I can put a mark on New Zealand because we had a discussion on the Family Group Conference that was invented in New Zealand ... We owe a debt to the Maori natives, it was true without the internet, but today I can make a link with the indigenous Maori community ... because those funny New Zealanders had taken the habit of stealing their children and educating them in their own way, and therefore they made this protocol which provides that no decision can be made about the child without the child participating and since the six-month-old child has no possibility to intervene, a spokesperson is appointed ... and then a meeting is held in which there are the school, social services, the family, the child represented by a specialised spokesperson. And nothing, instead of being taken unilaterally by the ruling class, decisions are taken in a participatory way.

The Italian educator reterritorialises social justice across global borders by acknowledging colonial injustices and drawing a connection to the marginalised positions of vulnerable pupils in the South of Italy. Moyo (2017, 134) argues that rethinking the digital divide from the South requires ‘that we question, if not altogether reject, the terms of the debate set by the North because he who controls the terms of engagement naturally controls the debate’. Here a convivial use of technologies is described by interdependence as a concept that enables geo-spatial solidarity and raise decolonised awareness in education communities. By making visible striated places on bodies along class, ability and race lines, it enables a ‘conversation and disseminate a desire for multiple ways of being-in-common’ (Macgilchrist, Allert, and Bruch 2020, 84) and a ‘work of intercultural translation’ (Santos 2018, 33) that opens for multiple becomings. Interdependence here promotes inclusion redistributing power in a way ‘that is less oppressive to those who have historically been hurt and silenced in the name of development’ (De Lissovoy 2010, 280), and foster collective responsibility and decision-making that agentially upholds children’s voices over professionals.

Relatedness

During the pandemic, edtech businesses in conjunction with state governments and international organisations jumped in to supply devices, broadbands, digital platforms to areas in which digital provisions were scarce. Indeed, these solutions supported connections, however they also raise questions about the ‘enforced obsolescence’ that digital imperatives imposed on education communities, disregarding local expertise and traditions and ‘threaten[ing] the right to tradition’ (Illich 1973, 48) and its transmission for culturally relevant presents and futures (Ladson-Billings 2021). Convivial technologies mobilise relatedness and empower local communities by embedding local histories and expertise in pedagogies and curricula ‘in ways that show concrete and historically situated social experience’ (Moyo 2017, 135).

Connecting with the territory

Convivial technologies map lines of power and re-assign meaning to local experiences. Here the Italian educator provokes some reflections providing tools to elicit different local narrations for inclusive education assemblages.

We, as educators, do urban regeneration by attributing new meanings to places, and new meanings emerge because there are people who value, invest on, and say something about these places. A quote from [...] says that participation in the city always derives from the narration, from how we tell the city so we need to tell about our periphery, because it is always the centre that is told, the ruling classes are told, but the poor devils [disgraziati] are not told except through the crime news ... , and through the internet we can make talking maps, localizations of places, geo-localisations that allow us to see an anonymous and grey neighbourhood, through its beautiful things, that aren’t beautiful in themselves, but because there’s someone who considers them beautiful.

The educator mobilises technologies to envisage a new narration of these spaces, rewriting these cartographies of centre/periphery (De Lissovoy 2010) and the rural/urban digital divide by using the digital to assign new positive meaning to the non-digital. The convivial dimension of technologies here enables relatedness by ‘helping young people imagine future, make connections, and build a sense of home’ (Wise and Noble 2016, 429), making their communities recognisable to them, ‘through talking maps and geo-localisation’ that speak differently from the determinist agenda that constituted the digital divide and produced them as ‘small’, ‘lacking’ and ‘underdeveloped’ (Langer 2015, 280–281). The digital here opens smooth and new territories of experience and by ‘naming and privileging particular voices and identities’ (Allan 2013, 40), enables processes of becoming-included of peripheral invalidated subjectivities (Santos 2020), and their connection to the local territory, through pedagogies that make the local resourceful, beautiful, and relevant.

Connecting with history and traditions

Convivial technologies include the non-digital to value local histories and traditional knowledge to thread the fabric of social cohesion. The Chilean artista-educadora provides another example.

... the activity was to think about an object that speaks about the past and the present. So in the south of Chile, en la Tierra del Fuego, there are these indigenous people and they say that all of them, and their culture, are dead. But it's not true because some of them are still alive and making a big effort to keep the culture alive in terms of language and way of living. So I found this documentary about a museum that is working with the Community, where you could see these old ladies knitting baskets and teaching their families ... It's this idea of knowledge that you have because it's passed on from generation to generation. I was showing the students this video and telling them about the importance of schools in keeping this history still alive and how objects are important, how they are history in a way. So I gave them five minutes, 'go around your house and find an object that speaks about the past and the present'.

Sancho-Gil, Pablo Rivera-Vargas, and Miño-Puigcercós (2020) remark that the roots of the word technology combine the Greek *technē*, ('art, craft') with *logos* ('word, reflection, transmission'). Here the artista-educadora, through her pedagogical activity, writes a curriculum that connects digital and non-digital to an ecology of scientific and nonscientific knowledges that belong to, and value, indigenous traditions invalidated by Western digital *progress*. Feenberg (1991 in Sancho-Gil, Pablo Rivera-Vargas, and Miño-Puigcercós 2020, 64) maintains that 'by choosing our technology we become what we are, which in turn shapes our future choices'. A convivial government through technologies delegitimizes hegemonic pedagogies of acceleration, and relates to the past as part of the present, retrieves 'the "vernacular" space' (Langer 2015, 101) in uses and customs. It prompts alternative educational imaginaries and inclusive assemblages that start from a different set of coordinates, responsabilising students as citizens that are caretakers (Macgilchrist, Allert, and Bruch 2020) of traditions, able to reassign them value through digital presents.

Conclusions

The COVID-19 pandemic and the push to remote digital learning exposed the workings of digital neoliberalism in producing, through the digital divide, new global dependences between Global South and North and new forms of (digital) vulnerabilities. State governments, international organisations, and edu-business alike mobilised discourses around digital technologies as the solution to include those children that the digital divide had reproduced as in need. In this way, not only new exclusions were produced along the usual social markers of ability, race, and class, but also a Global North-centred definitions of (digital) inclusive education were repropose, while opening a florid market for edtech.

In this article, we sought to demystify the salvific role of digital technologies and problematise Global North definitions of (digital) inclusive education by presenting findings from the DIGITAL in a time of Coronavirus project. We defined technologies as means of government, encompassing not only their digital and non-digital dimensions but also the education assemblages that they enable. We presented five concepts that describe technologies and their uses as convivial, to rewrite the notion of inclusion and enable alternative knowledges, pedagogies, subjectivities, and solutions to become visible and therefore enactable. These five concepts (accessibility, affectivity, presentness, interdependency and relatedness), and related planes of consistency as grids that enabled certain dispositions and connections to be made possible and visible, capture a convivial use of technologies for inclusion within local education assemblages which are increasingly shaped globally (De Lissovoy 2010). They emerge from the analysis of six instances in Italy, Chile, England, Malaysia, the US and Australia and are presented as qualifiers of connections across inclusive education assemblages, as heuristics that enable a rethinking of uses of technologies in ways that recognise diversity among learners, following molecular lines that connect digital and non-digital pedagogies, and root learning in local communities, resources and cultures (Armstrong, Armstrong, and Spandagou 2010). Lastly, these concepts allow to follow lines of flights that assembled around alternative

manifestations of ‘remotedness’; they move beyond Eurocentric, racialised and ableist understandings of experience and technologies and expand the epistemological premises on which subjectivities can become included.

Convivial uses of technologies open inclusive education to contamination of multiple systems of thought and epistemologies that do not rely on binary subjective formations. They provoke new lines of flight for interdependence, affectivity and decolonialised connectedness on a local and global level which can ‘help shape how digital education unfolds in more diverse and socially-aware ways’ (Selwyn and Jandric 2020, 1001). By making visible alternatives to exclusively digital solutions, we hope that these concepts can offer context-based policy tools for (political) intervention (Allan 2008) in the field of inclusive education, to rethink the entanglement of digital technologies, vulnerabilities and exclusion, and challenge narrow and Eurocentric constructions of the digital divide in ways that respect and enhance local expertise and culture.

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ORCID

Francesca Peruzzo  <http://orcid.org/0000-0002-0161-961X>

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