COVID-19, the global education project and technology: Disrupting priorities towards rethinking education

Charl Wolhuter[1] and Lynette Jacobs[*2]

*Corresponding Author: jacobsl@ufs.ac.za
1. North-West University, South Africa
2. University of the Free State, South Africa

Abstract

This paper argues that the arrival of the COVID-19 pandemic created a space to reconceptualise education and rethink priorities. Although no one will deny the devastating impact of the pandemic, humans have been able to continue with various projects, including the global education project, largely made possible through unprecedented technology advancement, as well as the uptake of technologies that advanced pre-COVID-19. In many ways, the clear distinction between human and technological (being non-human) practices has blurred to a point where the mere nature of human projects such as the global education project has become post-human. While different schools of thought on the nature of "post-human" exist, we use it to refer to what we are becoming together, a comprehension and awareness of the connectedness between humans and their natural and technological environment and the ethical concerns that come with it. COVID-19 provides an opportunity to reconsider the connectedness, complexities and dynamics of the world, and what we (humans, nature, Earth, technology) are becoming. Based on a literature survey and critical refection on the state of the global education expansion project at the time of the onset of the COVID-19 pandemic, we suggest the following changes to the ways quantity, quality and equality in education are conceptualised. The employment of technology should be added in the conceptualisation of input quality. Flexibility, support and connectedness should be built into the process quality equation. Most importantly, ecology should also be added as a product of education, and not merely a contextual influence in education.

Keywords: COVID-19 pandemic; post-human education; post-humanism; education priorities

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Introduction

At the onset of the pandemic, humans have shown resilience, fluidity and innovativeness to persist with various projects, largely made possible by unprecedented technology advancement, as well as the uptake of technologies that advanced pre-COVID-19. In many ways, the clear distinction between human and technological (being non-human) activities has blurred, and human projects such as the global education project developed a symbiotic character. At the same time, there is no denying that human activity itself was at the root of the pandemic (O'Callaghan-Gordo & Antó, 2020). Such realisation provides a critical moment in time to rethink and reprioritise human activity, its nature and effect with a strong consideration of the connectedness, complexities and dynamics of the world we inhabit, and what we (humans, nature, Earth, technology) are becoming.

In this paper we thus provide a post-humanist perspective on education using the global education project framework (Wolhuter, 2021) as an outline. We first briefly discuss the post-humanism position that we take in this paper, as well as the global education project prior to the pandemic, after which we touch on the pandemic itself. This provides us with scaffolding to review the literature towards making recommendations. Based on a critical analysis of priorities put forward by education researchers in publications across the globe since the start of the pandemic, we argue that education priorities need to be disrupted towards rethinking quantity, quality and equality in the post-human global education project.

Anthropocene, Capitalocene and Post-humanism

The time period since 1945 is increasingly referred to as the Anthropocene (Haraway, 2016), arguing that humans have become a destructive geological force, characterised by arrogance (Le Grange, 2018a; Le Grange, 2018b). Humans are overpopulating and destroying the planet, its forests and land, and polluting the atmosphere and oceans, while at the same time, social inequality is escalating (Le Grange, 2018b). Moore (2015, p. 70) considers how this has happened and use, like Haraway (2016, p. 119), perhaps a lesser known term, namely "Capitalocene", the destructive force of economy and power. Inter alia drawing from Marx, he argues that since the rise of capitalism, human activity was transformed into labour power, under a "dictatorship of commodity" and nature was put to work to generate capital (Moore, 2015, pp. 70–71). He points out that we consider "Nature (environments without humans)" as being separate from "Humans", instead of understanding interwoven "nature (the web of life)" (Moore, 2015, p. 98). Dualistic modernity thinking permeated throughout modern society – North/South; civilised/non-civilised; knowledge/myth; Western/Non-Western – elevating certain epistemologies, and ways of being and doing while others are devalued, (E-International Relations, 2017; Le Grange, 2018a; Moore, 2015; Schulz, 2017) disregarding relationships and interdependence and certainly not acknowledging or understanding the "complex mosaic of life" (Moore, 2015, p. 75). Haraway (2016, p. 119) adds to the discussion pleading for "multispecies ecojustice, which also embrace diverse human people".

Furthermore, as a result of technological advances, being human has become so linked with technology, which has its own agency to the extent that it can destroy all life on the planet, causing a "post-human predicament" (Le Grange, 2018b, p. 882). Petitfils (2015, p. 30) points out that the possibilities that came with digitalisation has allowed us to "rethink nearly every

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aspect of our daily lived experiences" but also to reconsider our "positions in the world, and how our actions and reactions are part of the larger fabric of our complex ecological situatedness". However, technology and how humans interact with technology, has evolved to a point where humans regard commodities and devices as their identities, creating mostly pretentious digital identities often to the point of being delusional, and this completely decentres their embodied identities. Schultz (2017, p. 1) warns against the "modernist paradigms of technological utopianism and economic growth" that are regarded as "the 'natural order of things' under global capitalism". This sets the scene for education as a human activity.

Education pre-pandemic

Education systems across the world were (and still are) built to the capitalist world ecology described above. Worldwide enrolment figures are increasing (Wolhuter, 2020), in production-line fashion but inequalities persist (Jacobs, 2016; Petitfils, 2015). Education has been deintellectualised and is increasingly being commodified (Petitfils, 2015) and all boils down to measurement, performativity and competition (Coetzee, 2019; Jacobs & Teise, 2019). Education systems are, furthermore according to Schultz (2017, p. 1) "inextricably linked to coloniality, defined not only as an unjust economic model, but also as a racialised, androcentric, and class-based hierarchy of knowing and being which still marginalises non-western cultures and histories". Petitfils (2015) likewise criticises modern education as dehumanising, oppressive and uncritical, rooted in neoliberalism, and thus resulting in the lack of agency, and the ability to deal with complexities. Rotas (2015) lament that education is not making a discernible ecological impact while the planet is obviously decaying. Petitfils (2015, p. 36) urge post-humanist educators to "help students recenter themselves and understand their own primordial essence as these formative years of posthumanity emerge". One of the questions that young people should confront, the author believes is "Who am I trying to become?". Indeed, there is a need for the education to go beyond production, the learning of skills and learning to socialise, but to focus on the self, the self in relation to the mosaic of life (that Moore alluded us to earlier) and to self-actualisation (Wolhuter, 2020).

Yet, modern education systems get assessed along three dimensions, namely the *quantity dimension* (e.g. enrolment ratio, literacy levels, throughput and completion levels), the *quality dimension* (Input-, Process-; Output- and Product quality) and the *equality dimension* (e.g. access, allocation of resources, realisation of potential, representation) (Wolhuter, 2021). Most of those concepts relates to production lines, resonating with Capitalocene. Education remains a tool in the hand of the geo-political and economic powers, to advance their agendas (Wolhuter, 2020), and time is ripe for change towards "collective spaces of resistance" (Petitfils, 2015, p. 40). Perhaps COVID-19 was indeed the spark education needed.

The COVID-19 pandemic

While the United Nations formulated, and later restated the Sustainable Development Goals (United Nations, 2015) to address the 17 wicked problems identified, complexities and challenges within numerous sectors are persisting and even escalating. Surpassing modernity, several authors have alluded to the awareness of imminent change and that "something radically new" was beginning (Petitfils, 2015, p. 30). Something radically new, although some

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did caution beforehand, caused the biggest upset the world has faced in decades when a deadly virus, causing what was classified as Coronavirus Disease 2019 (COVID-19), rapidly spread through the world since late 2019. The school and the post-school education and training sector rapidly had to embark on what is commonly known as emergency remote teaching (ERT) or emergency remote learning (ERL) to continue with education using these tools. Still, Begalinov et al. (2021, pp. 121–122) argue that the pandemic provided an opportunity for change beyond that:

> It seems that today it is important not only to rethink the problems of new digital, online and pedagogical possibilities of [post]modern education, but also the very essence of education, its main goals and new mission. Education that was before the pandemic will never exist [again].

Since the outbreak of the pandemic, an abundance of manuscripts on the impact of the pandemic were published, inter alia in special editions of journals. In an unprecedented way, and perhaps unintentionally, priorities were put forward in a bottom-up fashion in terms of the foci of the papers. In this paper we thus provide a post-humanist education, using the global education project framework (Wolhuter, 2021) as an outline of what was. The question can be asked, whether priorities remained the same, whilst using new tools and whether the mindset of education researcher indeed moved into new ways of thinking, being and doing (Jacobs et al., 2021), to adapt in response to the situation and show post-human agency (Rotas, 2015). We specifically analyse priorities put forward by education researchers across the globe since the start of the pandemic, using publications to which we had access.

Discussion: Scholarly thinking in response to COVID-19

The pandemic indeed created an opportunity to rethink the purpose and nature of school education. Gyuviyska and Tsankov (2020, p. 428) quotes Gatto who in 2010 wrote [our emphasis]:

> Neither networks nor schools are communities, just as **schooling is not education**. School networks occupy 50% of children's time, forcing them to share it only with children of the same age, requiring them to start and stop work when an audible signal is given, forcing people to think the same thing at the same time and in the same way, classifying them as if they were vegetables. Thus (and in many other insidious and insane ways) network schools steal the vitality of communities, replacing it with ugly automatization.

Gyuviyska and Tsankov (2020, p. 429) thus criticise education's character as a "full-time form of organization that fully subordinates the child to the institution" and point out that "[i]n a state of pandemic, it is clear that this is not a necessity for children or teachers". Begalinov et al. (2021) argue that in post-COVID times radical rethinking of education is required to combine the old and the new in flexible ways in response to the world we live in. We thus briefly look at the priorities put forward in publications to get a sense of how the global education projects might need to adapt.

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Early Childhood Care and Education (ECCE)/ Early Childhood Development (ECD)

Early childhood care and education (ECCE) is mostly seen as a social issue, and thus outside the formal structure of education. Across the world there are disparities in terms of regulation, funding and training and more, and in spite of the importance of the sector, it does not seem to be a priority to all (Jalongo, 2020; Koen et al., 2021; Kruger, 2021). Yet it influences the learner throughout their school career. From a neoliberal perspective, ECCE is important for the economy. Not only is it a way to enable women to remain in the workforce after having children, it also notably influences children's chances of success once they enter formal schooling (what Wolhuter [2021, p. 33] calls "learner bound factors" in "process quality"). From a South African viewpoint, Kruger (2021, p. 159) explains that in "communities with high levels of poverty, joblessness, substance abuse, crime and low levels of maternal education" Early Childhood Development (ECD) centres are mostly informal and not registered. Yet they are crucial, as not only do they focus on young children's socialisation and education, but also provide the young children with food, taking care of their health and their welfare in general.

This sector was hit hard by the pandemic. During 2020 this sector was completely closed down for months, with devastating effects not only on the children and families, but also the ECD centres who lost their support income (Koen et al., 2021; Kruger, 2021). Jalongo (2020) likewise reports how negatively this impacted on vulnerable families, including those who lost their income as a result of the lockdown regulations, as parents had to leave their small children in order to earn wages (Jalongo, 2020).

A strength that was reported on from this sector was the value of networks within communities. As an example, even prior to the pandemic, the non-profit organisation (NPO) that Kruger (2021) reported on, distributed donations (e.g. food) to the informal ECD centres and provided training to its staff. When the pandemic struck, their connectedness to these centres, as well as to the business community resulted in them staying digitally connected, soon providing food parcels for the families of the young children, and later provided training and health safety supplies in preparation of the reopening of the centres. They showed innovativeness and flexibility to address the complexities of the pandemic. Jalongo (2020) likewise commended the interconnectedness of her community to families who suffered food insecurity, and who distributed donations to the families. With ECD centres and schools closed, parents working in the informal sector survived and took care of their families with the support from their neighbours, families and friends (Jalongo, 2020), again reflecting communal values. Also, Koen et al. (2021) shares examples of innovativeness and connectedness in the sector.

Being innovative and finding ways to provide flexible opportunities for ECCE to young children, and to include and support parents are essential (Jalongo, 2020). Providers of ECCE, should be supported not only though guidance and training, but also mentorship, psychosocial support and resources (Koen et al., 2021; Kruger, 2021). Teaching young children is highly specialised and should be prioritised globally to develop a resilient and well-resourced sector (Jalongo, 2020).

Considering the above, priorities in this sector moving forward relates to comprehensive and specialised support and involvement by multiple stakeholders. This can only be achieved if the interconnectedness between different entities is understood (locality, society, commerce,

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education, the environment, family, etc.). The sector must retain and strengthen its flexible and adaptable character, and the agency of the role-players within the sector should be appreciated and celebrated, without being over-regulated.

School education

Across the world, schools also had to send the children home and find ways to continue with education under lockdown circumstances. Much of the discussions in the publication thus relates to the situation where schools had to adapt to ERT/ERL, although they focused on different aspects.

Scholars mentioned concern regarding quality and the rethinking of what quality means in the online environment (Sowiyah, 2021). With technology, tasks would sometimes merely be dumped on learners or their parents, which certainly was not satisfactory (Sowiyah, 2021). Gyuviyska and Tsankov (2020, p. 430) see the pandemic as a "good opportunity to ensure the necessary quality of educational services after the pandemic-related crisis is over" specifically concerning blended learning (combining online and traditional). The authors (*ibid*) argue that "purposeful and planned integration of electronic platforms" is required.

Scholars point out that while claims of learner-centred education are being made, practices still lag behind (Gyuviyska & Tsankov, 2020; Wolhuter, 2020). What is thus required is to transform "the educational environment" to be "increasingly student-oriented" (Gyuviyska & Tsankov, 2020, p. 430).

Closely linked with issues of quality, is the importance of equality. De Klerk and Palmer (2021) argue that education should prioritise equity and inclusion. This means that they must make sure that all have access to resources in an equitable manner, and that teachers' strategies must be adapted to the different needs of learners (Kilinc et al., 2018) Indeed, Williams et al. (2021) found that during the pandemic, inequalities in terms of access to technology was a challenge that teachers had to overcome. Technological equality does not only relate to equality and inclusion across racial, gender and class divides, but also requires due consideration in terms of region and locality (urban, peri-urban and rural) (Wolhuter, 2021). In post-pandemic times, access to internet and devices for all should be prioritised (Karakaya et al., 2021), and unequal connectivity must be focused on (de Oliveira et al., 2021). McCorkle's thinking (2020, p. 15), however transcends the practicalities of technology, and argues for the pandemic not to be an opportunity to fuel social unjust practices, but an opportunity to "combat xenophobic rhetoric" and promote inclusivity.

Almost every manuscript that we read mentioned the importance of human connectedness and that human interaction is needed (Karakaya et al., 2021; de Oliveira et al., 2021). It remains important for children to meet and interact with people who are different to them, to advance their social development and to develop their own identity (de Oliveira et al., 2021). The pandemic showed how children in urban societies were trapped inside their houses and missed the school playground, as space elsewhere is limited (Karakaya et al., 2021). Karakaya et al. (2021) reported that learners were bored due to a lack of interaction with others. Indeed, not only is digital inclusion important, but there is also a need to provide access to recreational spaces and to social interactions within the confines of health and safety protocols.

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During the pandemic, communication between stakeholders often seem to have been a problem. This included inadequate communication between parents and teachers at times, as well as ineffective communication between teachers and learners (Karakaya et al., 2021). Furthermore, because of the school psychologist being outside the formal teaching and learning situation, de Oliviera (2021) reports that they found it difficult to stay in touch with the teachers and learners, and assist with the relationships. Still, while parents are mostly not qualified teachers, and reportedly struggled to assist their children, the pandemic did result in parents being more involved in their children's learning (Günbaş & Gözüküçük, 2020), which is a positive spinoff.

Regarding technology, several authors focused on the software and hardware (Kalimullina et al., 2021; Tajik & Vahedi, 2021) that was used, which included a wide range (Zoom, Google Meet, WhatsApp, Telegram, Facebook Messenger, etc.). In the publications that we read, there was no consideration on aspects of safety and security (cyberbullying, privacy, etc.) and these will surely be forthcoming. Still, it was mentioned that children are digital natives, and during lockdown, spent more and more time playing online games (Karakaya et al., 2021) as a means to relax and to socialise. This is indeed the world of the post-human youth, and thus, de Oliviera and others argue, teachers should make more use of gamification when teaching. This stimulates cognitive functioning and gaming activities require greater psycho-emotional engagement (de Oliveira et al., 2021)

Authors reported about the flexibility that came with ERT/ERL and the digital space. For instance, de Oliveira et al. (2021) reported that both teachers and learners were positive about the flexibility and creativity that came with the ERT. Considering the future, Gyuviyska and Tsankov (2020) believe that schools should not go back to old ways of doing but should take a blended approach to retain the flexibility.

It became clear that support in current times is not only important, but also different. Teachers' responsibilities increased because of the pandemic and ERT (Karakaya et al., 2021) and they should receive instructional design as well as psychosocial support (de Oliveira et al., 2021; Sowiyah, 2021). Staying at home has overwhelmed learners and parents in terms of doing the work on their own, particularly when connectedness and communication was inefficient (Karakaya et al., 2021; Sowiyah, 2021; Subedi & Subedi, 2020). Gyuviyska and Tsankov (2020) argue that proper risk analyses need to be done as some parents are not able to support their children, including parents from disadvantaged circumstances as well as neglectful parents. Learners furthermore reportedly often struggle to stay motivated and to have self-discipline when they only study at home (Günbaş & Gözüküçük, 2020). Clearly, in technology-enhanced learning, psychologists should be involved to assist with the complexities, and to move beyond diagnostic and evaluative functions to focus on individual development of children and assist in relation building (de Oliveira et al., 2021; Tadeu et al., 2019).

There should be specialised assistance and due consideration for special needs children within a more fluid teaching and learning situation (Gyuviyska & Tsankov, 2020). De Klerk and Palmer (2021) argue that in this flexible space, special care should be taken to also adapt approaches and tools for learners with special education needs. An important part of support beyond the narrow understanding of education is making sure that children have nutritional meals. Various

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authors confirmed the need to be flexible and show agency to ensure that it continues (Jalongo, 2020; Kruger, 2021; Koen et al., 2021; Kwatubana & Molaodi, 2021).

So, considering the above, the most important priority is to consider how the learner can be centred and supported in a flexible education environment, that appreciates the potential that technology provides. The relationships between different role-players are crucial, and innovative ways to stay in touch with realities of children, parents and teachers, and ensure connectedness needs to be explored.

Higher education

Wolhuter and Jacobs (2021) refer to a "revolution" in the global higher education sector, linked not only to the economic upswing around the globe and neo-liberal thinking, the democratisation that happens around the world, and the emergence of a knowledges-economy, but also due to technological developments. Raza et al. (2021, p. 1991) confirmed the neoliberal nature of higher education as they stated, for instance, that Pakistani universities work hard for fear that "their economic contribution could be reduced". Along the same line Komleva (2021, p. 154) argues that "governments are trying to keep their educational systems competitive" in the hierarchical higher education landscape, and that large education bodies take collective strategies using digitalisation to retain their position in the global higher education landscape (Komleva, 2021)

Indeed, in these post-COVID times, the higher education landscape remains with "profound social, economic, cultural, and political inequalities" (Komleva, 2021, p. 151). With the dependence on online learning as a result of the pandemic, Komleva (2021, p. 151) warns that inequalities that include technical inequalities "has the potential to destabilize the social and political relations between countries". Such inequalities not only exist between regions, but also within regions, countries and institutions. Yet, there is a strong drive within the higher education sector to work together to overcome barriers, and to find innovative ways to create equal opportunities, including inclusive virtual learning across geo-political boundaries (Jacobs et al., 2021).

Regarding the move to online teaching and learning, it seems that students and lecturers in the higher education space were quite satisfied, and Li et al. (2021, p. 12) report that both groups "expressed interest in online learning as at least part of the future education style". Yet it warrants specific considerations. Digital inequalities, which creates significant barriers to accessibility and quality of learning in a pandemic environment and, in the long term, will lead to an even greater differentiation of the population" (Komleva, 2021, pp. 153–154) and must be addressed.

It is important to address the competitive and unequal higher education space with a student-centred focus, specifically also in the fluid learning environment. Rayner and Webb (2021, p. 51) argue that we need to "[e]stablish learning environments that place the student at the center of blended learning course considerations". This required of higher education institutions to take trouble to really understand the needs and realities of students in order to be responsive (Al-Nofaie, 2020; Rayner & Webb, 2021). This includes an awareness for, and an understanding of the realities of students who are differently abled (Ferreira-Meyers & Pitikoe, 2021). Higher education institutions need to actively promote inclusivity (Rayner & Webb,

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2021). Within the student-centred approach, flexibility and consideration for students, and ways of learning, is key (Al-Nofaie, 2020). Important that lecturers vary teaching styles, also in the online environment, to accommodate diversity (Altuwairesh, 2021).

Instructional design is of utmost importance. The expectation to lecturers to produce online learning material in a very short time without proper support and training negatively affected the academics during the pandemic (Li et al., 2021) and future situations should be avoided by equipped academics for online instructional design (Al-Nofaie, 2020). It must be student oriented, not only in terms of learning styles, and individualised learning, but must also consider the best way of assisting learners, within their realities. For instance, instructional design must take the cost of data into account and must opt for alternatives that use less data (e.g. a short video instead of a full one) (Li et al., 2021). It is recommended that academics provide lectures in piece-meal size, make sure that concepts are clear before proceeding with more complex work (Rayner & Webb, 2021). There needs to be clear guidelines in terms of expectations, timelines and how assessment will happen (Rayner & Webb, 2021). Students appreciate flexible and asynchronous learning, for example to be able to listen to recorded lectures more than once, instead of live-streaming (Al-Nofaie, 2020; Altuwairesh, 2021; Rayner & Webb, 2021). Scaffolding the learning, for instance by providing regular opportunities for self-testing, amplifies individual learning (Rayner & Webb, 2021). There needs to be technical support for students and staff at all times (Al-Nofaie, 2020), and special software made available for students who are differently able (e.g. Braille software) (Ferreira-Meyers & Pitikoe, 2021). Flexible learning puts the responsibility for learning on the students (Al-Nofaie, 2020), and this promotes agency. This can be strengthened through creating spaces for interaction between students in asynchronous discussion forums (Rayner & Webb, 2021).

During the pandemic, a much-needed change in assessment approaches was accelerated. Li et al. (2021, pp. 11–12) report that "online assessment methods have also been adjusted from closed-end questions at fixed examination hours to open-ended questions, clinical case analyses or essays within a more flexible time frame to ensure fairness in case some students suffered from issues related to the network or electronic power". Rayner and Webb (2021) suggest that lecturers focus on reasonable expectations, making sure that students will reasonably be able to answer the questions, based on readings.

As in the case of ECCE/ECD and school education, there was a strong voice in favour of human connectedness. Students miss the interaction, miss feeling part of a community (Altuwairesh, 2021). Real-time interactions are thus important to students and staff (Li et al., 2021). As Altuwairesh (2021, p. 395) points out, "technology … can never substitute the critical role teachers play in the educational process". It is thus important to find ways to keep students involved and engaged (Li et al., 2021). The digital space appears to be a safe space for students who are often invisible in the face-to-face situation. Introvert students are more at ease to participate and interact digitally (Altuwairesh, 2021). This is also true for students who come from a teacher-centred culture (Ho et al., 2021). It is recommended that lecturers show their faces during lectures to establish that sense of presence (Rayner & Webb, 2021), even if it is recorded for use during synchronous learning opportunities. Furthermore, lecturers must find ways to make themselves accessible to students outside the formal teaching time, for instance

by establishing virtual office hours or through a discussion channel for students (Al-Nofaie, 2020; Rayner & Webb, 2021).

The lockdown regulations in the various countries had some positive spinoffs, in the sense that students and lecturers could be with their families and stay safe (Li et al., 2021), yet it also left the students feeling isolated and unmotivated. Altuwairesh (2021) reports that students felt overloaded, and it was a challenge to stay motivated without physical contact with lecturers and fellow students. Giving group assignments that students can do outside the classroom, to connect with each other, is suggested (Rayner & Webb, 2021). It is also important to build some element of a social event, which could include a regular coffee hour (Jacobs et al., 2021), or games in the form of quizzes (Rayner & Webb, 2021).

In the discussion above it is clear that there is an awareness of the neoliberalist capitalist forces that play into Higher Education, and some suggestions to counter it was put forward. Inequalities were recognised and some suggestions to address it also at an individual level were made. A great emphasis was places on how to design online and blended teaching and learning to be flexible and accommodating, to also allow agency to emerge. This resonates with the recentering of the self as present in the post-humanist discourse. Connectedness with the family was focused on. Yet the publications were silent on issues relating to the environment, with only Altuwairesh (2021) referring to time saved if one does not have to travel, without considering the environmental impact thereof. Rayner and Webb (2021) recognised the potential that other global disasters are due to happen.

Reflection

In many ways, the clear distinction between human and technological (being non-human) practices has blurred to a point where the mere nature of human projects such as the global education project should be reconsidered. In addition, consideration for the world and its ecology should join in the centre, and thus the non-hierarchical connectedness between the natural and technological, and the agency within these networks, should inform post-pandemic education. Moore (2015, p. 111) urges us towards a "different ontology of nature, humanity, and justice – one that asks not merely how to redistribute wealth, but how to remake our place in nature in a way that promises emancipation for all life".

Did the COVID-19-pandemic, which is a direct result of the exploitation of Nature (cf. Moore, 2015), move education scholars to a new ontology, or are we focused on using new tools to advance the old education project?

Consideration in the literature that we reviewed, on the effect of education on the environment, and the positive effect that less commuting has, was found wanting. This might still be forthcoming, but it seems to not be an immediate priority for scholars. While the current global education framework considers how the school environment affects education, certainly one should also include how education systems influence the environment.

We did get a sense that the understanding of interdependence and individuality is emerging. Technological utopianism was certainly not present, and awareness for human relations as well as human vulnerabilities were present in the discourse. A real concern for inclusivity was put forwards, inequalities were recognised across the education sectors and ways to support those

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who experience barriers were highlighted. Still, there seems to be mainly an unawareness of how ECCE and school education supports and promotes inequalities and exploitation. Still, in the higher education sector, some voices did position against neoliberalism and consumerism.

Recommended changes to the global education framework

Education as a global project will not be cancelled. With the insight that post-human thinking brings and taking into account the priorities put forward in this limited literature study, and the silences recognised, we suggest that *technology and equipment* be explicitly added under the category of *input quality. Process quality* should be strengthened by adding *flexibility, support, innovation* and *connectedness* as elements throughout the aspects. But most importantly, the environment should also be added as a *product* of education, and not merely a contextual influence in education.

Prior to the outbreak of the pandemic, Moore (2015, p. 75) pointed out that "[h]uman organizations are environment-making processes and projects; human organizations are shaped by manifold environment-making processes in the web of life". Considerations of how education at various levels are environment-making processes should be prioritised.

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