

Reflections on Differently Abled Students' Challenges with Online Learning amidst the COVID-19 Pandemic and Lockdown

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Abstract

The normal teaching, learning and assessment for students who are differently abled is through contact teaching where they receive support from specialists, peers, carers, and the Disability Unit. Specialized equipment and physical support for students who are differently abled are located in the University facilities and mostly occur within the university environment. The COVID 19 pandemic disrupted face-to-face contact teaching, and in an effort to contain the spread of the virus and save the academic year, universities were required to shift to remote online teaching and learning. This chapter responds to the gap identified in the literature and focuses on challenges with online that students who are differently abled face during the COVID-19 pandemic era. The chapter focuses on one research question: What challenges do students who are differently abled faced with online learning during the COVID-19 pandemic era? We embraced an ecological perspective on learning to (re)think how learning spaces arise through the interdependent interactions of students who are differently abled with teaching and learning materials, digital tools, lecturers, parents, and the community in a multiplicity of contexts that are bounded within an ecosystem. The study was framed by Bronfenbrenner's Ecological System Theory. Zoom was used as a platform for data generation. Data were generated through photo elicitation reflections from three

participants from one campus at a South African university. Data were initially analysed by NVIVO to obtain codes; thereafter similar codes were grouped into themes. Our findings illuminate the bi- and multidirectional influences of (f)actors within and across the university, students' home and community contexts that shape differently abled students experience of online learning. Our findings highlight the need to forge collaborations across various spaces that students who are differently abled find themselves in. At a theoretical level our findings call for the need to reconceptualize learning spaces.

Keywords: COVID-19, differently abled, Higher Education, online learning, challenges

Introduction

The onset of COVID-19 brought an abrupt halt to many activities taken for granted, such as contact sport, attending large social gatherings, schooling, going to work and travel. Social distancing, wearing of masks, sanitising, working from home, home-schooling and online teaching and learning have become the new 'normal'. The pandemic has sparked robust ethical debates within the education sector about the need to save lives, save the academic year, and ensure that no student is left behind, whilst being cognisant of issues of culture, equity, and social justice. The COVID-19 enforced lockdown has required of universities to suspend contact sessions to contain the spread of infections amongst the university population and to embark on remote online teaching and learning. Whilst the shift in the mode of delivery from contact sessions to online learning by universities during the COVID-19 period has been hailed as panacea for the academic year, it restricts the inclusion of students who are differently abled. Students who are differently abled are more vulnerable than other students, as they have more needs related to healthcare, safety and accessibility. In the decisions made about remote online learning during the COVID-19 pandemic, students who are differently abled have become the most vulnerable and isolated. Under non-COVID-19 conditions the teaching, learning and assessment for students who are differently abled occurred via contact teaching where they received support from specialists, peers, carers, and the Disability Unit. Specialized equipment and physical support for students who are differently abled are located within the university facilities and environment. Thus, during the lockdown period this specific

group of trainee student teachers had limited access to academic support, were isolated from an enabling university environment, and had limited opportunities for socialization and collaborative learning. Research on teacher preparation that is specific to online learning and specific to students with disabilities are scarce (Kennedy & Archambault 2015).

This chapter responds to the gap identified in the literature and focuses on challenges faced by students who are differently abled with online learning during the COVID-19 pandemic era. It emphasises the need to develop a relational, plural, emergent understanding of online learning spaces in terms of pedagogical and technological means that ought to traverse institutional, social, and cultural boundaries to help all students (both abled and differently abled). In other words, the online learning space is conceived as an ecosystem that comprises many processes that are spread across different contexts, boundaries, or spaces. Our concern is how spaces of online learning are shaped to support students who are differently abled. In line with our above rationale, we embrace an ecological perspective on learning. An ecological perspective of learning allows us to (re)think how learning spaces arise through the interdependent interactions of students who are differently abled with teaching and learning materials, digital tools, and lecturers in a multiplicity of contexts that are bounded within an ecosystem.

Literature Review

According to the *Strategic Policy Framework on Disability for the Post-School Education and Training System* (2018:viif):

Disability is defined as the loss or elimination of opportunities to take part in the life of the community, equitably with others, encountered by persons having physical, sensory, psychological, developmental, learning, neurological or other impairments, which may be permanent, temporary or episodic in nature, thereby causing activity limitations and participation restriction within mainstream society. These barriers may be due to economic, physical/structural, social, attitudinal and/or cultural factors.

The effect of COVID-19 has increased economic, physical, social, attitudinal and/or cultural barriers, particularly for students with disabilities, due to the

shift from contact learning to online learning without physical and technological support. The Constitution of the Republic of South Africa Act 108 of 1996 has codified the rights of all people in South Africa in the Bill of Rights.

The White paper for Post-School Education and Training has mandated the Department of Higher Education and Training (DHET 2013) to recognize the right of people with disabilities and their participation or access to higher education as part of the transformation process in South Africa. Universities provide a range of support such as assistive technology laboratories with screen readers, dictating software to enable normality and enabling them to be in mainstream education (Wisniewski & Sedlak 1992). Mudau, Netshisaulu and Ncube (2019) contend that students experience challenges at higher learning institutions; however, students with disabilities experience another layer of challenges such as learning support, infrastructure, and social life.

The onset of the COVID-19 pandemic has demanded learning institutions to suspend classes and change the learning mode from contact lessons to online learning. This demand has implications for students who are differently abled. For example, they face increased isolation during the lockdown period as it limits accessibility of academic support and isolation from an enabling university environment and experience increasingly limited social life.

Social life exclusion and shifting the mode of learning and teaching to online learning contribute to stress and anxiety experienced by students with disabilities (Lambert & Dryer 2018). McManus, Dryer and Henning (2017) conducted a study on barriers to learning online experienced by students with a mental health disability. One of the findings suggests that the learning environment was a major challenge for students with disabilities. Similarly, the effect of COVID-19 was exacerbated by lockdown and social distancing requirements. Stone (2017) highlights the importance of teacher presence, which plays a crucial role in building a sense of belonging amongst students living with disabilities in the learning environment. When students engage with online activity, the sense of belonging is not as strong as when students learn together in the classroom, because they meet virtually. Time is limited and being in a virtual group is limited because of data. Edwards (2019) conducted a study about online learning experiences of students with disabilities on inclusive learning and teaching at an Australian University and the findings

suggest that collaborated effort is required from curriculum designers, policy makers and educational leaders. Collaborated effort in planning holistic learning is of importance; however, due to COVID-19, Universities had to rush to save the academic year, where academics were working in isolation to change the mode of learning to online learning. The time available for lecturers to shift from contact sessions to online learning was limited and excluded inputs from other stakeholders.

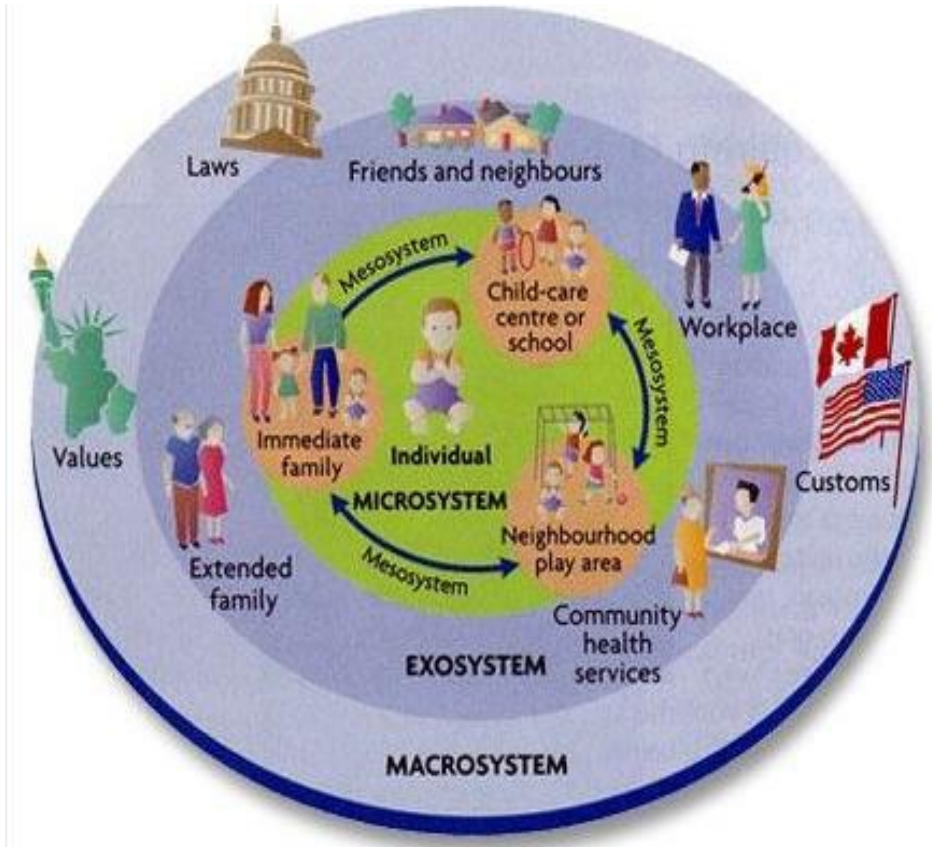
The contextual diversity among students contributes to the digital divide among students. According to Mahlangu (2018), students need to be trained for online learning in order to learn how to use the technology, develop time management skills, gain confidence, and learn how to cope with online posts and debates. Furthermore, Bali and Caines (2018) assert that with online learning students are expected to present their views on a public platform and, if they do not know how to do this, it creates a problem for some of these students, or if they are uncomfortable expressing their views publicly in an open platform, it could be problematic. Thus, it is important for students to be trained for online learning.

Theoretical Framework

Studies by Booth *et al.* (2013) and Mole (2012) reveal that students who are differently abled not only lag behind other students on standard measures of achievement, but are also more likely to drop out of campus and are twice as likely to stay longer in the system. Considering the above evidence, we opted to embrace a theoretical framework that would enable us to explore the challenges faced by students who are differently abled with online learning during the COVID-19 pandemic era. The Ecological System Theory (EST) (Bronfenbrenner 2005) is an apt theory to underpin this study, as it provides a framework that emphasises the interaction between an individual's development and the multiple systems within the social context. In other words, EST allows for unpacking the complexity of the influence, interactions and interrelationships between students who are differently abled and the systems that are (dis)connected from the student.

The use of EST allows us to conceive disability as the resultant product of the dynamic interaction between humans and their surroundings. This shifts the emphasis from students who are differently abled to the broader social, cultural, economic and political environment within which the student is

located. Simply stated, this means that '(dis)ability' may be perpetuated by the (dis)abling environment. In other words, the EST Model construes the disabling practices of society (in this instance the universities' online learning systems) as contributors to the further disability of students who are differently abled (Bronfenbrenner 2005).



Source for Bronfenbrenner's Ecological System Theory: Berk and Roberts (2009:12)

Bronfenbrenner's theory highlights the layers or levels of interacting systems that impact human development; hence, human behaviour, experiences and actions cannot be understood without the context within which they occur

(Bronfenbrenner 2005). The isolation limits the interaction with peers and physical engagement with lecturers, and negatively impacts students who are differently abled.

Bronfenbrenner's model illuminates the complexity of the interaction and interdependence of multiple systems that affect individuals, their development and learning. Barriers to learning arise in these dynamic interactions. Furthermore, EST allows us to conceptualise the online learning space as a dynamic ecosystem that comprises many processes spread across different systems/contexts, boundaries, or spaces.

Methodology

This qualitative study was located at a teacher training campus at Richwood University (pseudonym) in South Africa. Participants for the study were purposively selected based on their proficiency and knowledge about the researched phenomenon (Creswell & Creswell 2017). In this study there were three participants, one from the disability unit and two from the teaching and learning office. The participant from the disability unit liaises with academic staff informing them about the students' special learning needs. She has regular meetings with the students and is responsible for ensuring that the specialized equipment required by the students is available within the university environment. The two participants from the teaching and learning office were academic leaders responsible for the remote online teaching and learning programme adopted by the university. Participants were assured of confidentiality and anonymity.

The lockdown and the Covid-19 pandemic elicited the three researchers to think anew about data generation, as conventional methods of data generation were not possible. Zoom was considered as a platform for data generation for the following five reasons: it is convenient and cost-effective; it has screen-sharing abilities for both the interviewer and participants (to display and discuss documents for example project details, informed consent, etc); Zoom includes password protection for confidentiality (only invited participants can log in); Zoom allows for recording of interviews and automatically saves the interview recording into two files formats, audio only and a combined audio/video file. To safeguard the identity of the participants during the recordings, participants were requested to wear masks that hide the face.

Three Zoom meetings of 30 minutes each were used to generate data via photo elicitation reflection. These meetings were recorded with the informed consent of the participants. For each Zoom meeting, a host was appointed by mutual consent among the researchers to probe/seek clarity during the photo-elicitation session; however, the other two researchers could press the reaction button when they needed to probe an issued further.

Photo elicitation is the use of photographs to generate verbal discussion (Thomas 2009). The difference between conventional interviews and photo elicitation lies in the way participants respond to the symbolic representations in the photographs.

For the photo elicitation,¹ the visual images were chosen by the participants on the phenomenon being explored and during the interview the participants were asked to reflect on their chosen visual image/s (Bigante 2010). In this study we opted for participants to select pictures or drawings linked to the focus of the study and then reflect on them during a Zoom session, thus making it a collaborative rather than a researcher-driven effort. Shaw (2013) refers to the above method as participant-driven photo elicitation, because in the interviews or reflection sessions participants lead the conversation about the images. The advantage of participants selecting images/drawings is that participants might bring content to interviews that is not available, noticed or considered important by the researchers (Guillermin & Drew 2010), and it counterweighs the unequal relationship between researcher and researched (Clark-Ibáñez 2004).

All Zoom recordings were transcribed verbatim and sent to participants for member checking. Member checking, also known as respondent validation, is a technique used by researchers to help improve the accuracy, credibility, and validity of the data generated (Creswell & Creswell 2017).

These transcripts, were fed into a qualitative analysis package, NVIVO, to generate tag clouds.² These codes were then manually traced within the transcripts to track their associations with other codes. The transcripts were

¹ Photo elicitation – consists of narrative on the photo chosen followed by an interview on what was stated during the narrative.

² Tag clouds are the word frequencies of the text, represented in different fonts to indicate the importance of the respective code within the text (the larger the front, the more important the code).

read and reread before patterns of associations could be identified. The exercise was also to illuminate the bi- or multi-directional interconnectedness of codes across the various learning spaces or layers of the EST model and its impact on online learning for students who are differently abled. The interconnected codes were regrouped and collapsed into four themes. For example, the codes, connectivity, power outages, assistive devices, technical support, and technical training were regrouped into the theme, technical ecological resources, while the codes, teaching methods and content design, were grouped as teaching resources. The codes, time and home environment, were grouped into the theme, home-study balance. The codes access, institutional support, lack of parental support, no contact with fellow friends from the disability unit, confidence and cannot work alone, were grouped into the theme, collaborative ecosystems.

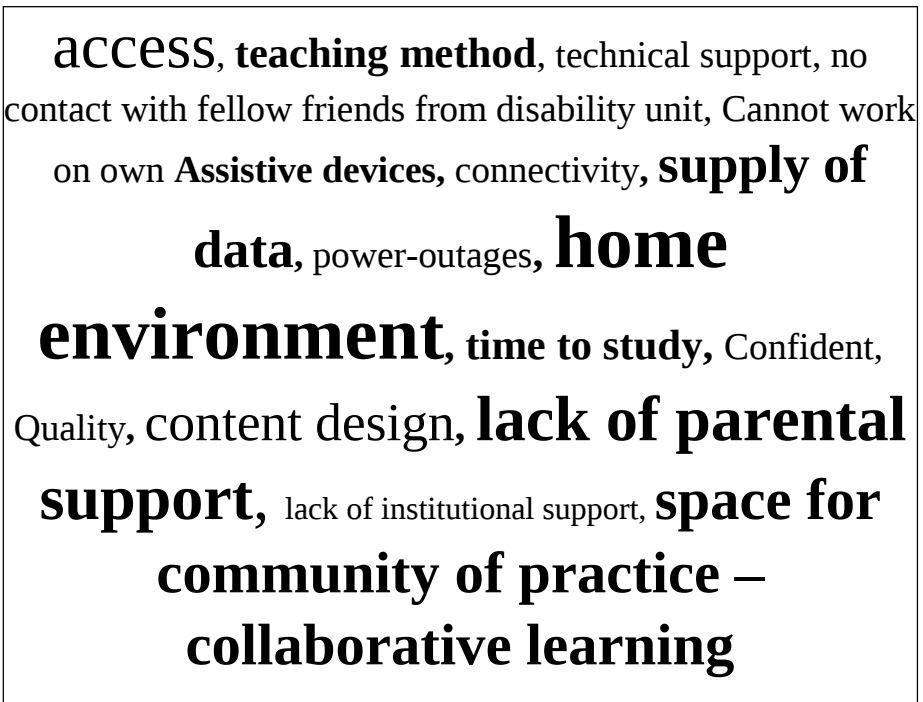


Figure 1: Tag cloud illustrating frequently used code

Findings and Discussion

In this section we attempt to respond to our research question: What challenges do students who are differently abled face with online learning during the COVID-19 pandemic era? Data generated via photo-elicitation interviews were used to answer the research question. Our analysis makes explicit the nuances of exclusion that challenge students who are differently abled, namely technical ecological resources, teaching resources, home-study life balance and ecology of collaboration.

Technical Ecological Resources

The technical ecological resources are an amalgam of the following codes, connectivity, power outages, assistive devices and technical support and technical training. These ecological resources are located within the students' microsystem according to the Ecosystem theory.

Various steps and processes are put in place to ensure that printed learning material are easily accessible to students who are differently abled during face-to-face learning. Moreover, the university must ensure that all technical recourses required to facilitate online learning are readily available to students for them to engage in online learning. In the absence of these vital resources online learning becomes fallacious and a frustrating challenge to students who cannot access their learning material, as it evident in the excerpts below:

The lack of infrastructure, not receiving data timeously and poor unstable internet connectivity and load shedding are barrier and challenges to all students but more so to differently abled students who rely on assistive technology located at the university lab for learning and to access information. Due to the restriction of movement, students were not able to access the university lab (Photo-narrative, S).

Similar views were expressed during the photo-elicitation interviews:

How do differently abled students who continue to receive data late from the university ISC department make up learning when the

teaching of a particular section is over? Is there catch-up teaching for this cohort of students? (Photo-elicitation interview, A).

My concern is with our students with disabilities, how do we expect them to cope with online learning without their specialized equipment, we have not trained them or given them technical support for online learning, they have only engaged in face-to-face learning, online learning is totally new. We cannot have a one size fits all approach with our students, if we are to embrace the universities stance of no student being left behind. What mechanisms are in place to support this cohort of students? I'm deeply concerned (Photo elicitation interview, R).

The excerpts above bring to the fore the contextual realities that confront differently abled students across their learning spaces. The lack of essential resources like data, stable connectivity and assistive aids impacted students' ability to embark on online learning. In South Africa, internet connectivity is further challenged by power outages brought on by load shedding. The above findings resonate with those of Heydenryck and Prinsloo (2010), who emphasise that limited access to electricity, data, and telephone networks impacts access to the Internet and is a barrier to online learning (Olunyika & Endozo 2019).

It is visible via the above excerpts that, as a university, in our haste to shift to online learning, even though the university has supported students with data students who are differently abled had another added layer of need such as assistive technologies (AT). Georgeson, Mamas and Swain (2015) explain that students with disabilities obtain more meaningful learning experiences if they have access to AT like alternative interfaces (e.g. screen readers), reading tools (e.g. text-to-speech), recording tools (e.g. voice recording), writing tools (e.g. word prediction), planning tools (e.g. mind-mapping software) and communication tools (e.g. synthetic speech). Consequently, we have 'locked out' students who are differently abled from online learning, pushing them to the peripheries of academic isolation without the adaptive technologies or skills needed to cope with online learning. The above findings are aligned with those of Van Jaarsveldt and Ndeya-Ndereya (2015), who identified technological barriers, a lack of awareness, and poor liaison among the

institutional stakeholders and lecturers from the responsibility of providing technical support to students who are differently abled. Additionally, the above excerpts illuminate the parallel twofold online teaching and learning platform contexts that characterize Richwood University in terms of variances in infrastructure (one for abled students and the other for differently abled students). Such discrepancies in access to resources can increase the digital divide among students. Consequently, students who lack access to the required technical resources can get left behind further in an already compromised and divided education system (Ramarathan 2020). Thus, concerted efforts must be made by the university powers to address contextual challenges that impede students who are differently abled from accessing online learning. At a theoretical level, the findings bring to the fore the bidirectional influence of the (lack of) technical ecological resources within the university and within the students' sociocultural environment, and the collective influence on the student and their engagement with online learning. The Ecological System Theory elucidates the multiple interconnectedness of the technical resources that influence the differently abled student's engagement with online learning.

Data collected from students with disabilities in a UK higher education institution showed that students with disabilities lack the correct digital capital to enable them to succeed within higher education environments. Thus, it is important for higher education institutions to 'conceptualise' and 'organise' technology-related support services for students with disabilities, to support and promote access to equitable educational experiences and outcomes (Georgeson *et al.* 2015).

Teaching Resources

Inaccessibility to teaching content and design of on-line learning materials were a barrier to students who are differently abled, as is highlighted in the excerpts below:

Teaching online is not the same as teaching face to face, it is important to know how to design and present content for online teaching to facilitate student learning. You cannot just transfer your face-to-face lesson plans and assessments to the online teaching platform and expect students to engage and pass. In the absence of the human touch, one has to find new ways of communicating, sustaining interest and

encourage engagement in the lesson on a virtual platform, especially for students who are differently abled (Photo narrative, A).

Similar views were expressed during the photo-elicitation interviews.

Staff attended many training sessions and on how to use the various technology platforms to engage in online teaching but we still need to move to the next level by organizing training on pedagogy for online teaching for students who are differently abled. This area is lacking and will compromise students learning (Photo-elicitation interview S).

During normal face-to-face teaching, content material is adapted for students with special education need. How can we expect this group of students to access materials presented in one form only? We have excluded this group of students from online teaching. The dry run attests to these students lack of engagement and their cry for help by requesting to return to campus (Photo elicitation, R).

The above excerpts elucidate the challenges associated with online learning, namely the lack of human touch between the lecturer and students who are differently abled, the need to actively facilitate, communication as well as the need for specific pedagogy for online teaching, and the design of materials. When one teaches in person, students are engaged in several activities such as explaining, guiding, scaffolding, and questioning. In our haste to prepare for online teaching, teachers have often translated their face-to-face practice to their online practice. The use of face-to-face material for online teaching does not ensure that it is accessible by students who are differently abled. Lecturers must ensure that the materials designed must also cater for the social inclusion of students who are differently abled, be it visual, hearing, motor, and cognitive impairments. Van Rooij and Zirkle (2016) assert that catering for students who are differently abled in the design of the learning materials greatly enhances the interaction of students with online learning. Similarly, Cooper (2015) maintains that online material that cannot be read by screen readers, or accessed without a mouse, and educators who have little knowledge of how to ensure that their courses are accessible, exacerbate the difficulties faced by students who are differently abled. The introduction of relevant technologies can provide support to students in their learning, only if more is known about

how they process information. According to Berkshire and Smith (2000), pedagogical decisions require full consideration of students' personal histories as learners, linguistic strengths and obstacles, group mores relative to academic performance, and wider social and cultural realities. The unique learning styles of students who are differently abled call for an increased flexibility, not only in the design of the curriculum and syllabi, but also in delivery modes and instruction (Fahy, Steel & Martin 2010).

The above challenges impede the learning process for differently abled students, who have access to human contact and specialised materials developed for them during face-to-face teaching and learning. The above findings resonate with those of Favale *et al.* (2020), who assert that the lack of human touch, poor pedagogy and inadequate compatibility between the design of the content and the students' learning style can lead to frustration, confusion and lack of interest in the learning process.

The use of EST allowed for unpacking the complex interconnectedness of the influence, interactions and interrelationships between students who are differently abled and the multiple systems that disconnected these students from accessing online learning. As such, the inability to connect or (dis)connect to online learning is the by-product of the dynamism between the student and his ecological locale.

The use of the Ecological System Model during analysis brought to the fore the disabling practices of the University and the lecturers during the design of the online teaching and learning programme on the students' microsystem. These disabling practices not only isolate and silence students who are differently abled; they also hinder the cognitive development of students who are already differently abled.

Home-study Balance

Students who are differently abled faced many challenges with online learning during the lockdown period, as the closing of institutions deprived them of a conducive learning environment with assistive aids (Manzoor 2020). Students who are differently abled voiced their dissatisfaction at being at home in e-mails and WhatsApp messages to the teaching and learning office and the disability unit. Their reasons for being unable to participate in online learning are explicit in the excerpts below:

I vividly recall receiving an email from a differently abled student. It reads ... my granny scolds me, sayings I'm disabled there is no need for me to study she expects me to do housework and oversee my aunties children and prepare meals for them. She thinks I am on holiday and the university is closed (Photo-elicitation interview, S).

The house is so crowded and noisy, there is no space for me to study, I really wish I could be back on campus, can you please help me Miss then I will escape the chores, noise, and have a decent clean room to myself and I will be able to study using the assistive aids (Photo-elicitation interview, R).

The multiple forms of exclusion from online learning as well as the multi-directional challenges that students with disabilities encounter daily in their home environment come to the fore via the above excerpts. It is obvious that, in spite of the flexibility associated with online learning, many differently abled students encounter time scarcity, as their time is manipulated and juggled with engaging in household chores, taking care of siblings, parents' lack of understanding that being at home during the lockdown means that the online academic programme continues. Time scarcity is a major factor that impacts the balance between online learning and family responsibilities. Furthermore, the home environment is not conducive to learning, leaving students feeling vulnerable. These are real challenges that students with disabilities are forced to cope with every day. At a theoretical level, EST unveils the macrosystem of the students' environment, the interaction and the influence of the norms, customs, cultural values of the society and how these impinge students' access to online learning.

Collaborative Ecosystems

When differently abled students are engaged in face-to-face learning on the university campus, their study, recreation, socialization, and family time are mutually exclusive because of the different spaces where each of these activities occur. Furthermore, they have different types of support available to them to help them cope. With the closure of universities, online learning has become the new normal. A major disadvantage of online learning for students who are differently abled is that they cannot turn to a neighbour for help or

raise a hand to ask a question; they cannot socialise or collaborate with their peers, and often parents are unable to assist them with academic queries. The lack of multiple forms of collaboration that extends across learning spaces leads to a strong sense of isolation and a dire need for support among students who are differently abled. In face-to-face teaching, as a teacher you can pick up on nonverbal cues: Are students bored or confused? You can observe the signals and adjust what you are doing. When students attend class at home, perplexing over your explanation of a complex concept, you are not there in real-time to allay their confusion, or to scaffold their thinking. The above sentiments were echoed during the photo-elicitation interview:

I wonder if we have flexed our pedagogies enough to include our diverse learners in our online teaching preparations. Based on my experience and the kinds of support we provide to our students, for many of them their success at university is dependent on the personal, consistent, face-to-face interaction with staff, students, and their support bases. Online teaching and learning reduce the likelihood of this interaction, it takes away this safety net that students depend on (Photo-elicitation interview, A).

Where do they get support if not from us, how or what can we do to ensure they have some sort of support in their homes or communities. We must workshop parent and communities on how to support these students better, this will be our next step in our project (Photo-elicitation interview, S).

The need and value for a safe collaborative support system for students who are differently abled, which extends across the university, home and community, is evident in the above excerpts. Tolu (2013) states that collaborative learning spaces also provide an environment where students who are differently abled can project themselves socially and emotionally. Our finding signals the need for safe collaborative spaces to extend from the university, home, and community in order to support students who are differently abled, and allow them to access online learning as well as experience success.

The use of the Ecological System Model at an analytical level highlights that students do not exist in isolation from the surrounding systems.

The lecturers, the curriculum, learning materials, modes of delivery, assessment, peers, parents, and community are all actors within the students' ecosystem that help to determine the success of differently abled students.

Concluding Remarks and Recommendations

In this manuscript we reflected on the challenges differently abled students encountered during online learning amidst the COVID-19 pandemic and lockdown. We proposed an ecological perspective for thinking about online learning for students who are differently abled. This perspective depicts learning as not linear or unidirectional, but rather as fluid, multidirectional and self-correcting occurring across different spaces within an ecosystem. Our findings support our initial argument for a more accessible, collaborative, inclusive approach to online learning for students who are differently abled. Our findings brought to the fore the multiple forms of exclusions students who are differently abled encountered as challenges when they engaged in online learning. Due to COVID 19, the exclusion gap became wider. For example, learning in their specialized environment on campus excludes them from the main lecture room and learning online in isolation and without interaction further excludes them from assistive devices and engaging with peers and lecturers, which creates a wider gap.

The use of the Ecological Systems Theory Model at a theoretical and analytical level allowed for the interaction between the students' development and the multiple systems within the social context to become conspicuous, thereby illuminating the bi and multidirectional influences of (f)actors within and across the layers (contexts) and the potential challenges students encountered with online learning. Neutralising the bi-and multidirectional influences within the students' ecosystem would eliminate the potential challenges students who are differently abled encounter. Some of the neutralisers would include providing technical training to students to embark on online learning, empowering academic staff with the pedagogies needed for online teaching, training academic staff to develop online course materials for differently abled students, but most important, to forge collaborations among the university, parents, and communities in which students who are differently abled reside. What we have learnt is that all students needed online learning support during COVID 19 pandemic such as data, laptops, etc. however students who are differently abled needed another layer of support like

assistive technology. A recommendation arising from this study is the need to explore how to create university, home, community collaborations to further support students who are differently abled.

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