Teaching and Learning Challenges and Opportunities for Students with Disabilities in Higher Institutions of Learning in Kenya During the COVID-19 Pandemic

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ABSTRACT

COVID-19 pandemic has caused the greatest unsettling in education history, from preprimary to the highest institutions of learning. Owing to lack of cure and effective treatment, several containment measures were implemented, leading to prolonged closures of educational institutions. This created numerous challenges for both educators and students, particularly in higher education where institutions struggled to maintain the continuity of learning. The introduction of online learning across diverse platforms became a necessity, yet it presented a myriad of challenges for both institutions and students. Among those most adversely affected were students with disabilities (SWDs). Delivering instruction through online platforms proved to be not only different but also particularly challenging for SWDs, and their instructors. However, despite these difficulties, the pandemic has also highlighted opportunities for improving educational practices to better accommodate SWDs. This paper therefore examines the challenges and opportunities that the COVID-19 pandemic has created for SWDs, drawing on a systematic synthesis of literature. During this pandemic, instructors in higher education institutions are unable to adequately meet the educational needs of SWDs through on-line platforms. The findings reveal that instructors in higher education were often unable to meet the educational needs of SWDs adequately through online platform also struggled with the lack of a structured learning environment and reduced peer interactions, which are critical to their educational experience. Specific challenges included the absence of sign language interpretation for the deaf and hard of hearing, and a lack of screen readers for students with visual impairment. The findings underscore the importance incorporating the principles of Universal Design for Learning (UDL) into educational technologies, as UDL accommodates a diverse range of learners, including SWDs

Key words: COVID-19 pandemic, Digital learning platforms, Education Disruption, Higher Education, Online Learning Students with Disabilities, Universal design for learning

BACKGROUND INFORMATION

The COVID-19 pandemic has resulted in the most significant disruption of education in history, affecting learners and teachers globally, from preprimary to tertiary institutions (Omwami et al., 2022). Due to the lack of a cure or effective treatment, World Health Organization (WHO) and various Ministry of Health (MoH) implemented safety measures and containment protocols. This led to the closure of educational institutions, impacting 94% of the world's student population and up to 99% in low- and middle-income countries (World Health Organization, 2021). Beginning in early March 2020, a number of colleges and universities suspended in-person classes, transitioning instruction and all possible operations to remote format (Smalley, 2020). Nearly

all higher education institutions followed suit. Although this shift was necessary given the rapid rise in cases, it left campus communities struggling to adapt, particularly those without prior experience in online instruction. Institutional closures affected not only learners, instructors and households, but also had extensive societal and economic consequences. These included challenges related to digital learning, learner debt, homelessness and food insecurity, as well as access to childcare, health care, internet, housing and disability services. The effect was more severe for students with disabilities (SWDs).

It is estimated that about 15% of the world's population has different disabilities (WHO, 2023). Between 110-190 million of them have disabilities that cause significant difficulties in functioning (WHO, 2012). There are nearly one billion people with disabilities all over the world and more than a hundred million people have heavy disabilities and need assistance (WHO, 2012). Disability is not a fault and people with disabilities (PWDs) are a part of community and have equal rights like other members of the society who do not have disabilities. It is the responsibility of governments to support PWDs to maximize functioning, support independence and participate in the community activities (UN, 2006). People with disabilities are a part of human diversity and humanity. They should have equal opportunity and accessibility with people without disabilities (UN, 2006). In Africa, most activities from social, political and economic stalled due to COVID-19 outbreak (Jacob, Abigeal & Lydia, 2020).

In the education sector, the situation has never been the same again with over 72% (1,268,164,088) learners out of their institutions in over 177 countries as at April 2020. Some of the strategies and approaches which are being used in availing education to the learners have been through homeschooling, use of media e.g., radio, television, and virtual learning. The position of remote learning is still bleak in Africa as compared to other countries as less than 25% of low-income countries currently provide any type of remote learning, and of these, the majority are using TV and radio. In contrast, in the developed world close to 90% are providing remote learning opportunities with almost all offering services being offered online (Chidambaram, 2020)

As of 28th April, 2020, Kenya had reported 374 confirmed cases of COVID-19 with 124 recoveries and 14 deaths. To curb the spread of the disease in learning institutions, the government abruptly closed all schools and Institutions of Higher Learning. Most of the institutions of higher learning cancelled in-person classes and moved to online-only instruction. The move to online-only classes for instruction prompted concerns about the quality of educational instruction provided remotely. Previous studies have warned that student performance, particularly for students who are already academically struggling, can seriously suffer in online courses. Other research has found that up to 20% of college students have issues accessing effective technology including working laptops and reliable high-speed internet. Some colleges announced plans to help students who might lack access to an internet connection. Many institutions of higher learning also shifted to pass/fail grading system instead of standard letter grades. While this transition could help students in the short-term, switching courses to pass/fail could create potential complications for student credit transfer and graduate schools. Colleges and universities also faced a number of unexpected expenses from the outbreak. These expenses included: refunds issued to students for room and board, increased cleaning operation costs, and growing technology costs from moving courses online. Due to these expenses, several colleges and universities have announced hiring freezes for faculty and pay cuts for staff. Concerns about adjunct and part-time faculty, who make up more than 40% of faculty nationwide, have also emerged.

Statement of the Problem

As of April 2020, 94% of learners globally were affected by the COVID-19 pandemic, representing 1.58 billion learners. While online learning generally has taken place through recorded lectures and online platforms, some universities postponed learning and teaching due to lack of ICT infrastructure and relevant skills for both the students and instructors. Regarding student adaptation to the remote delivery, undoubtably some sub populations of students struggled more than others. Beyond students from lower socio-economic status backgrounds, one population of students that may have faced particular challenges related to the quick shift to full online and remote teaching is students with disabilities (SWDs). Disabilities may involve any one or more medical, psychological, physical, sensory or cognitive impairments and manifest as challenges in various aspects of functioning and daily life, such as learning, problem-solving, depression, interpersonal relationships, communication skills, adjustment to new situations, anger management, substance use and other impairments.

This pandemic has therefore exposed equity issues and challenges faced by all students, but especially for SWDs. Educators have learned that providing instructions in a classroom setting and providing instructions in an online setting is not only different but also challenging. For instance, in an online instructional environment, one difficulty faced by special educators is the inability to adequately provide special education services for SWDs. Many SWDs struggle with an online learning schedule because they need a more structured learning environment and interactions with their peers and teachers. This paper will therefore try and address the challenges and opportunities created by the COVID-19 pandemic as well as examine the availability of assistive technology for remote teaching and learning of SWDs in higher institutions of learning in Kenya during the COVID-19 pandemic.

Objectives of the Study

1. To examine the challenges experienced in teaching and learning for SWDs in institutions of higher learning during the COVID-19 pandemic in Kenya.

2. To establish the opportunities available for virtual teaching and learning for SWDs during the COVID-19 pandemic in Kenya

3. To establish the availability of assistive technology for remote teaching and learning for SWDs in higher institutions of learning during the COVID-19 pandemic in Kenya

METHODOLOGY

This being a theoretical desktop review of literature, it relied on review of secondary data material to discuss the challenges, opportunities and mitigations for COVID-19 in the education sector for to establish the opportunities available for virtual teaching and learning for SWDs during the COVID-19 pandemic in Kenya in institutions of higher learning. The paper is based on a systematic synthesis of literature.

Theoretical and Philosophical thought of the study

This theoretical study was steered by the theory of justice and fairness as advanced by Rawls John (1971) who is for the values of justice to govern modern social order. The theory gives a structure that explicates the importance, in a society presumed to comprise of equal and free persons of political and individual liberty of equal opportunity and cooperative organization that profit the privileged and less privileged members of the society. It advances the notion of justice from the perception that individuals are equal and free thus, educational structures ought to be planned so as to eliminate peripheral obstacles of any form (social, cultural, economic, political or, ecological) that inhibit ingenious learners from less privileged upbringings from maximizing innate talents which triggers them to social promotion. Theory of justice and fairness stresses that every citizen should be accorded, through education, a chance to exercise freedom and advance their social rank. By availing education to SWDs from every social stratum, it is believed that one eliminates the barriers that are congenital by the virtue of having a disability, born in less fortunate background, marginalized or vulnerable (MoE, 2018). This theory supports the view that learners should have equal chance at all levels of education disregarding their status and socio-economic background. This will ensure that ideal conditions are created to implement the vision of equal opportunity, where every learner has admittance to the education being offered.

This theory is appropriate for this paper given that unequal provision of education through the digital platform discriminates upon the SWDs. The poor families where majority of the SWDs come from, in their quest for basic education, cannot afford to purchase the digital infrastructure to equally learn from home just as their counterparts of means, hence not giving them equal opportunity and this perpetuates inequalities. This theory greatly agrees with Universal Design for Learning (UDL) which is a way of thinking about teaching and learning that gives all students an equal opportunity to successes. This approach offers flexibility in the ways students access materials, engage with it and show what they know. When lectures are developed this way, they will be helpful for all students but may be more helpful for SWDs. This approach to teaching aims to give all students equal opportunities to success, no matter how they learn.

Teaching and Learning Challenges for Students with Disabilities in Higher Institutions of Learning in Kenya During the COVID-19 Pandemic.

Introduction

The COVID-19 crisis has impacted both students and instructors alike, posing complex and unprecedented challenges to the higher education sector. While online learning is not a new concept, the sudden shift of moving traditional education to a virtual setting was a daunting task in a short amount of time. Transitioning to a virtual setting forced many educators to learn new technologies and skills and caused stress among teachers and students. In addition to moving to an online learning environment during the COVID-19 pandemic, special educators were faced with multiple challenges ranging from equity issues for students, providing instruction in a virtual environment, and providing special education services. During the closure of school period, the best education solution is the employment of the distance education method using online teaching and learning (Gavin, 2020). However, as much as this mode has been hailed as a solution, research has shown that there are inherent challenges children with disabilities face when using the remote learning model (Webo & Whitley, 2020). The following are some of the challenges that have been realized in the teaching and learning of SWDs in institutions of higher learning.

Challenges with containment Protocols

Safety measures intended to contain COVID-19 transmission inadvertently created new educational challenges for students with hearing loss. Examples include the loss of visual cues and auditory-signal attenuation from face masks, reduced access to sign language interpreters, and lack of captioning or transcripts for online lectures or meetings (American Speech-Language-Hearing Association, 2020; Goldin, Weinstein, and Shiman, 2020; National Association of the Deaf, 2020; Rudge, Sonneveldt, and Moog Brooks, 2020; Atcherson, Finley, McDowell, and Watson, 2020). This challenge has been witnessed in almost all the institutions of higher learning in all countries which have been affected by COVID-19, and which had opted for online learning. For students with hearing disabilities who rely on lip reading to communicate, masks present communication barrier. A *British Broadcasting Cooperation report* in August, 2020 detailed how the Haylott family, in which both parents and eldest son are blind, have faced many difficulties as a result of the pandemic. Vicky Haylott, a student at one of the universities told reporter "I cannot observe the one-way systems, I cannot look at the signs, I cannot observe the two-meter social distancing thing…" (BBC report, August 24, 2020). Vicky also noted, "*It's not just difficult for a blind person to social distance, it is actually not possible if you are completely blind. It traps us because the constant nerves and worrying about whether you're going to accidentally walk into someone or get run over by a bicycle, or not be able to find the queue for a shop. For those of us with no vision, we can't do social distance, so the measures put in place now are impossible for us to adhere to*." (BBC report, August 24, 2020)

E-Learning Platforms

With the availability of a sea of platforms and online educational tools, the users—both educators and learners—face frequent hiccups while using it or referring to these tools. Different categories of SWDs use different communication strategies which might not be usable during online teaching and learning which include students with hearing impairments, visual impairments among others (KNBS, 2009). The E-learning platforms may not be disability friendly. Materials used on online teaching are not in Braille and in sign language (Makachia, 2020). Further, the author noted that internet connectivity is poor in most countries and lack of broadband penetration and that some of the online gadgets are not specially designed for various categories of SWDs, especially for students with visual impairment. Similarly, parents and teachers are not trained on online teaching and the use of technological equipment involved.

Inadequate Technological Infrastructure

Inaccessibility of technology or quick, dependable internet access has barred SWDs from participating in learning virtually. Inadequacy of access to technology or sound internet connectivity is a hurdle to continuous

learning. In addition, many SWDs come from poor backgrounds whose parents cannot afford the technological gadgets required such as smartphones, laptops, tablets, television, radios among others (Phoenix, 2020). In reaction to institutional closures instigated by COVID-19, UNESCO (2020) recommended the utilization of distance learning platforms and open education applications and any other platforms that institutions and instructors can utilize to get in touch with students distantly and minimize the interruption of learning (UNESCO, 2020).

In the United Kingdom, According to National Union of Students (NUS) survey of more than 4,000 university students in the UK, 27% of respondents were unable to access online learning during the COVID-19 lockdown. Majority of students did not have access to smartphones or TV at home in addition to poor Internet connectivity. There is inadequate income for huge population due to closure of business and offices. The data package (cost for data bundles) is comparatively high against average income earned, and continuous access to Internet is a costly business for the families of SWDs. Online face-to-face classes (video) is encouraged by most; however, some SWDs have expressed that the face-to-face online class consumes more data packages. The instructors are in dilemma as to whom to listen to and which tools to adopt. Some think pre-recorded videos could help; however, this would restrict interactions. It is difficult to design a proper system to fit the learning needs at the convenience of SWDs. In Kenya, with the Government adopting remote teaching to support distance learning and online education delivered through radio, television and internet, SWDs, vulnerable and marginalized households have no financial ability to access these media of learning availed, further worsening inequality in access, relevancy and quality of education (MoE,2020).

Lack of a friendly accommodative Environment

A study conducted in USA focusing on SWDs at the time when all schools and institutions of higher learning had been shut due to the COVID-19 indicated the difficulties learners with disabilities faced in accessing their education. At the time, USA was an epicenter of the COVID-19 globally. The study was based on findings from the library sources and observations showed that SWDs missed all benefits associated with being in schools such as lack of understanding friends and teachers, regular meals, and emotional stability due to structured school routines. Most SWDs perceive learning institutions as their second home as they stay there for most of the year. During the pandemic, it was observed that SWDs missed assistance of school friends and services of interpreters, transcribers and readers. In addition, SWDs did not benefit from online teaching and learning due to their various forms of disability and diverse needs. There was also no prior preparation before the institutions closure to train instructors and other staff on how to continue teaching or training SWDs needs online. In the United Kingdom, according to National Union of Students (NUS) survey of more than 4,000 university students, 18% said they lacked the support necessary to deal with COVID-19, such as counselling or financial help. The SWDs and those with caring responsibilities were more likely to have not received this support. After the closure of the institutions of Higher Learning, SWDs who could have accessed learning materials from the public libraries within their reach, could not do so as these were also closed indefinitely.

In the United States, frequent main states publicized public library cessations, affecting two hundred and twenty-one libraries. In Kenya, library services were also put on hold. This escalates the struggle of coping up with distance learning (Hauck, 2020).

In India, 37.9% SWDs continued their study through textbook reading and digital e-learning, while 30.6% students were studying through reading textbooks by own effort and not participating in e-learning. Only 14.1% of students were attending online classes daily, while 54% of them were attending online classes less than 3 days per week. In this lockdown period, it was reported that SWDs were mostly suffering from stress, depression, and anxiety (42.0%) (Kapasia et al, 2020)

The students were also facing problems related to poor internet connectivity (32.4%), followed by the absence of a favorable environment to study at home (12.6%). SWDs residing in rural and remote areas may face poor internet connectivity. Moreover, poor economic conditions might be a reason for the unfavorable environment and lack of separate room for their study. It should be mentioned that the online learning process is often discriminatory.

Challenges in following classroom process

Students with hearing loss can find the classroom a challenging environment and this can lead to social isolation. Not being able to interact with other students may affect the learning process. They are not motivated to take part in tutorials. If they cannot follow the progress of the lecturer, they might not learn effectively. A study conducted in Malaysia by   Krishnan I.A., et al (2020) showed that the students with hearing Impairment in Institutions of Higher learning complained of disruptions during the lessons. The students who suffered from spastic diplegia, a form of cerebral palsy, complained that they faced problems in online learning. They indicated that they favour face-to-face learning because it is more appealing and they are able to intermingle with other students and lecturers. The report further states that the students noted that they are required to format questions digitally in place of voicing them to reduce disruptions. He further asserts that the students noted that since it affects their motor skills, it is a struggle for them to type fast enough.

However, the students noted that it was fortunate that they can still rely upon social media to bring up questions and they suggested that raising questions orally should be an alternative for SWDs. They also noted that recording of all lectures would go a long way in assisting SWDs understand the relevant subjects better. Krishnan et al., (2020) further asserts that lecturers should be aware that SWDs must be provided with sufficient time to process the subjects being taught.

Lack of Technical know-how

A study conducted in Malaysia by   Krishnan et al (2020) showed that the SWDs in the Institutions of Higher learning complained of devices that they are supposed to use while undertaking their studies online. The authors reported that SWDs noted online learning requires devices that they are not familiar with, like the laptop and Smartphone. The students also complained that people mention about applications like Skype, Google Classroom, zoom but they feel they are not able to use any of these. SWDs also reported that their parents don't understand what online learning means and they cannot afford to provide all that is required for them to be able to undertake online learning efficiently.

Disproportionate Access to Technology and Internet

The COVID-19 pandemic has exposed equity issues and challenges faced by all students, but especially for students with disabilities (Kaden, 2020; Sullivan et al., 2020; Tindle et al., 2017). Hamilton et al., (2020) conducted a study in USA where teachers reported that almost 86% of their SWDs had difficulties with internet access while 64% did not have appropriate technology devices needed for an online learning environment. In the same study, 38% of teachers also reported having inadequate access to internet or technology. Educators have learned that providing instruction to SWDs in an online setting is not only different but also challenging (Young & Donovan, 2020). In an online instructional environment, one difficulty faced by special educators is the ability to adequately provide special education services for SWDs, especially those with multiple or more significant disabilities. This challenge is increasingly more difficult for SWDs who need access to such services as speech, occupational, or physical therapies (Schaeffer, 2020). Providing accessibility for students who are deaf or have hearing impairments as well as those with visual impairments in an online instructional environment is another challenge facing educators (Tandy & Meacham, 2009; Debevc et al., 2011; Howdhuri, et al., 2012; Alsadoon & Turkestani, 2020). Shaheen and Watulak (2019) indicated that inaccessible technologies are as problematic for people with disability as inaccessible buildings. Examples of accessibility issues include a lack of sign language interpreters for the deaf and hard of hearing, a lack of screen readers for those who have visual impairments or learning disabilities. Educators who lack technology training and resources face many barriers when teaching SWDs in an online environment.

Opportunities available for virtual teaching and learning for learners with disabilities during the COVID-19 pandemic in Kenya

The COVID-19 pandemic has had a huge impact on the way higher education institutions offer education, limiting student and staff attendance on campus, and instead, encouraging them to rely much more on online resources. The pandemic has presented a challenging time for SWDs in higher institutions of learning. However,

there are several opportunities created by the COVID-19 pandemic for SWDs in higher institutions of learning

a. Remote learning is particularly crucial for SWDs who are also considered vulnerable to the COVID-19, as it reduces the physical interaction they have with others.

b. For students with physical disabilities, such as respiratory disorders, blindness, or those who use a wheelchair or mobility scooter to travel, a virtual higher education experience does have its advantages. For example, the idea of receiving an education entirely online is likely to ease the anxiety some SWDs may have about traveling to and from campus or navigating campus itself.

c. The accelerated shift to online learning has merely provided SWDs with greater choice when it comes to accessing higher education. The cases SWDs who may be denied chances to have physical attendance of classes due to their kind of disability or health conditions, are now able to enroll and undertake their courses of choice virtually.

d. Another benefit of online education is that it can provide SWDs with a more assisted approach to learning, something that traditional teaching, such as group lectures or seminars, can sometimes struggle to achieve. In response to the pandemic, the University of Padua, Italy, expanded their internet resources to include "specific support related to online teaching for students with all kinds of disabilities." For example, Professor Laura Nota, lecturer at the university, told UNESCO about one of their new features where students with hearing impairments can benefit from the online stenotype service, which consists of the transcription of both synchronous and asynchronous lectures, that allows them to easily follow their courses.

e. The use of online platforms such as Google Classroom, Zoom, virtual learning environment and social media and various group forums like Telegram, Messenger, WhatsApp and WeChat are explored and tried for teaching and learning for the first time ever to continue education. This can be explored further even after face-to-face teaching resumes, and these platforms can provide additional resources and coaching to the SWDs

f. It has forged a strong connection between instructors and parents than ever before. The homeschooling requires parents, care givers to support the students particularly those with disabilities academically and economically during this ongoing emergency.

g. Instructors are obliged to develop creative initiatives that assist to overcome the limitations of virtual teaching. Instructors are actively collaborating with one another at a local level to improve online teaching methods. There are incomparable opportunities for cooperation, creative solutions and willingness to learn from others and they try new tools as instructors, parents and SWDs share similar experiences (Doucet et al., 2020). Many educational organizations are offering their tools and solutions for free to help and support teaching and learning in a more interactive and engaging environment. Online learning has provided the opportunity to provide necessary services to SWDs and learn in innovative ways unlike the teaching and learning experiences in the normal classroom setting.

h. The emergence of COVID-19 pandemic apparently has caused different stakeholders to start planning about the education of SWDs in inclusive settings (McClain, 2020). This is an opportunity COVID-19 Pandemic presented to SWDs despite the very many challenges. Up to and until now inclusive policies in place have not been implemented to the letter by various governments including the Kenyan one (UNICEF, 2020).

i. In previous emergencies in West African countries like Sierra Leon, the strategies and educational solutions that were used during quarantine period included the use of Radios and Televisions that were provided by the governments for online learning and virtual lessons (educatiocannotwait.org). These platforms were enhanced with accessibility features, continuity of instructions for all learners including those with disabilities. This was an opportunity for SWDs which had not been there before the emergence of the disease and this will equally be an opportunity due to the COVID-19 pandemic all over the world

and especially in developing countries (UNICEF, 2020).

Availability of assistive technology for remote teaching and learning for learners with disabilities in higher institutions of learning during the COVID-19 pandemic in Kenya

Assistive Technology is a technology used by individuals with disabilities in order to perform functions that might otherwise be difficult or impossible. Assistive Technology can include mobility devices such as walkers and wheel chairs as well as hardware and software that people with disabilities use in accessing computing or other information technologies. For example, people with limited hand functioning may use key board with large keys or special mouse to operate the computer, people who are blind may use software that enlarges screen content, Job access with speech (JAWS) for reading, people who are deaf may use Text Telephone (TTY) while people who have speech impairments may use device that speaks out loud as they enter text via a keyboard (Access IT, 2012).

In the USA, institutions of higher education are required under the American Disability Act (ADA) section 504 to have Assistive and Adaptive Technology in place. This includes hard wares and soft wares such as speech recognition programmes, sip and puff devices as well as embossers. There is also online support for disability/ accessibility on website pages for remote instructions information for SWDs and educators. Students are also provided to access counselling services by making appointments through the websites. Making information available to SWDs is a fundamental part of accessibility in higher education. Doing so is all the more necessary given the challenge brought by the COVID-19 pandemic. (Meleo-Erwin, et al 2021).

Kapasia et al., (2020) conducted a study in India where the results revealed that most learners use android mobile phones for attending to virtual lessons. There is a mention of discrimination of the marginalized students especially those from the poor backgrounds and those with hearing impairments who experience difficulties using online platforms (Kapasia et al., 2020). There is no any reference to challenges experienced by SWDs who must also depend on accessible technology.

In a study in Kenya conducted in 2017 on effects of online learning on SWDs in public universities, the respondents agreed that use of online learning allowed them to interact with other students and work together on assignments but denies them opportunity to interact with teachers and get assisted within reasonable time frames. SWDs could learn in the most convenient learning style at any time, any place and at their own pace. On ease of learning, the respondents agreed it was easy to become competent by the use online learning. However, the respondents reported that it was not easy to do what one need using online learning model due to limited access to efficient internet connections (Ogutu, 2017).

On online learning infrastructure, Information Communication Technology (ICT) facilities can assist SWDs adequately. However, E-learning facilities are not always available when needed in the institutions by SWDs. The institutions to provide equal opportunities to access e-learning to all students, trained SWDs on access to e-learning model and even trained the lecturers to facilitate the e-learning model (Ogutu, 2017).

CONCLUSIONS

To date, there are still challenges facing the education systems such as lack of internet connectivity in most areas of the country, lack of bundles and gadgets necessary to facilitate learning. In the situation of SWDs, their diverse needs have to be addressed first for them to benefit and this will take a long time. There is an effort by the government to make adjustments on the current infrastructure in institutions of higher learning to facilitate learning during the pandemic but we still have a long way due to inadequate resources required and time to meet the expected standards.

RECOMMENDATION

SWDs must be considered in all planning and implementation efforts during the shift to remote and online education during the COVID-19 pandemic. All course materials must be accessible to all students at the time of release. Education systems should think of incorporating the principles of UDL in the provision of technology

because it accommodates a wide range of learners, including SWDs.

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