The Impact of COVID-19 Pandemic on Students With Special Needs: A Case Study of Kakamega County, Kenya

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Many countries suspended physical learning due to COVID-19 and switched to virtual learning to mitigate the spread of the pandemic. Grounded on social learning theory, this quantitative study examined the effect of the COVID-19 pandemic on the education of students with special needs in Kenya. Statistical analysis revealed negative consequences of school closure on the academic performance and the level of inclusion of remote learning of students with special needs. COVID-19 affected academic performance of participants distinctly 90% (n = 27), greatly 36.7% (n = 11), considerably 16.7% (n = 5), moderately 26.7% (n = 8), slightly 10% (n = 3), and not at all 10% (n = 3). Besides, school dropout after lockdown showed that COVID-19 significantly affected the education of students with special needs, 60% (n = 6). Additionally, COVID-19-induced remote learning hurt the education of students with special needs—P-value = 0.00403<0.05. Education is a significant component in poverty eradication. However, the sudden change to virtual learning created accessibility difficulties that compounded the historical deficit culture-induced schooling problems students with special needs faced. Then, the Kenyan government should include children and youth with special needs and their families in all the community disaster management and recovery programs.

Keywords: **Disability, Digital Infrastructure, Pandemic, Virtual Learning, Inclusion**

Introduction

The COVID-19 pandemic interrupted life globally starting early 2020 (United Nations Educational, Scientific and Cultural Organization-UNESCO, 2020a), causing far-reaching vicissitudes in all aspects of people's lives. Like any other human sphere, the pandemic disrupted the education sector in many ways. Governments' actions like restrictive movement and social distancing to limit coronavirus spread led to many countries (e.g., Kenya, Britain, Tanzania,

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Singapore, Uganda, United States) postponing face-to-face learning affecting more than 94% of the world's learner population (UNESCO, 2020a). Remote learning took its course in Kenya, which affected about 1.785 million primary and secondary school learners with special needs (Kenya National Bureau of Statistics-KNBS, 2019). Traditional classes were substituted with materials and books acquired from schools, government agencies, and nongovernmental organizations (Ressa, 2020). Then, the purpose of this study was to understand the far-reaching alterations caused by the COVID-19 pandemic on the education of students with special needs in Kenya.

Multiple researchers have published their scholarly works on the impact of COVID-19 on students in distinct ways (e.g., Bentenuto et al., 2021; Chatterjee & Roy, 2020; Haleman & Yamat, 2021; Jain, 2020; Ressa, 2020). However, to our knowledge, there is little research work on the impact of COVID-19-instituted school closure on the education of students with special needs in Kenya. Therefore, the study aimed to identify the effect of the COVID-19 pandemic on the education of students with special needs in Kenya during and after school closure to propose the best ways their education can contribute to the operative practices of disaster management and recovery process. So then, the study's objective was to analyze the effect of the COVID-19 pandemic on students with special needs in Kakamega County, one of the 47 counties in Kenya with a particular interest in their academic performance and the level of inclusion of remote learning. This makes assessing the inclusivity of online learning and the impact on their academic performance significant. However, the effectiveness of virtual education of students with special needs is usually difficult to determine due to many variables—often uncontrolled—that influence access and participation in learning.

The Kenyan schools were required to implement distance learning using technology and the Internet. Different e-learning platforms (e.g., Edutopia), and in some instances, national television programs (e.g., Kenya Broadcasting Corporation) and social media podiums (e.g., YouTube, Facebook, WhatsApp, Google Meet, Google classroom, Microsoft Teams, Edmodo, Skype) became a modicum of operation, allowing interaction between the students and teachers (Reuters, 2020a). However, the limited/lack of Internet connection and the inflated cost of Wi-Fi connection and limited/lack of power in remote areas (Ressa, 2020; Reuters, 2020b) hindered online learning for students with special needs (UNESCO, 2020a). Like many other countries (Thai et al., 2020), Kenya is not impervious to the digital divide despite being an information and communications technology hub in East Africa. The digital divide bounds access to online learning for students with special needs in remote settings of those living in poverty.

Kenyan students with special needs have faced schooling barriers for decades (Sifuna & Otiende, 2006). Children with special needs and their families are habitually excluded from disaster management and recovery programs, as reflected in the governments' lack of a playbook and scarcity of information related to them during school closure (Muhumuza, 2020; United Nations Office for Disaster Risk Reduction-UNISDR, 2015). Nevertheless, education is a critical component in the disaster management and recovery process (UNISDR, 2015). Having students with special needs access to education before, during, and after disasters can promote their resiliency and involvement in disaster management and recovery programs to benefit the Kenyan community. Empowering students with special needs depends on making education—physical and virtual—accessible to them and their families. The Kenya government's decision to confine citizens to limit the spread of COVID-19, which included school closure, means that investing in virtual education as an alternative mode of learning is essential. Therefore, the effects of school closure on the education of students with special needs were statistically analyzed and then understood using social learning theory, which holds that learning is socially mediated by tools and signs— semiotics (Bandura, 1979; Cole, 1996; Vygotsky, 1978). Furthermore, the social learning theory suggests that children can acquire new strategies, knowledge, and culture when they engage in various joint activities since their interactions allow them to internalize the effects of collaboration (Vygotsky, 1978).

Building on the above concepts and empirical studies, we put forward the following hypotheses.

Ho: COVID-19 did not impact the academic performance of students with special needs.

H1: COVID-19 did not impact the level of inclusion of remote learning for students with special needs.

Methods

This quantitative study enabled the researchers to examine the impact of COVID-19 on academic performance and inclusion of students with special needs in remote learning and to collect and analyze data to understand an educational phenomenon that is often understudied and understood because it involves students with special needs (Öztürk & Şahin, 2019; Palinkas et al., 2010). Furthermore, the quantitative approach allowed the researchers to test and confirm hypotheses based on an existing conceptual model and obtained a breadth of understanding of predictors of COVID-19 impact on the education of participants (Öztürk & Şahin, 2019; Palinkas et al., 2010). In addition, this study was grounded on the social learning theory, which posits that social processes such as interactions and networking enable observations, imitations, and understanding of other people's feelings and behaviors and therefore learning

processes that influence learners' social behaviors (Bandura, 1979; Cole, 1996; Gutiérrez et al., 1999; Lave & Wenger, 1991; Vygotsky, 1978; Wertsch, 1991). The social basis of learning and interactive processes that promote the growth and development of individuals is evident in social learning theory through scaffolding, reciprocal teaching, and collaborative learning.

In this context, the quantitative study addressed the apparent gap between theory and practice that often arise when researchers are subjective and focus on the impairments of learners with special needs. It also helped with the validation of data (Greene et al., 1989). Also, social learning theory provided a basis upon which we appraised the education of students with special needs through the lens of their social interactions with stakeholders in education, primarily educators and peers in physical and online learning settings. We discerned ableist factors in education (Danforth, 2014; Devlin & Pothier, 2006; Gabel & Connor, 2014), which informed our recommendation on the schooling of students with special needs.

Settings

Ten participating schools were in Kakamega County served students with special needs (i.e., students with a variety of disabilities involving the senses and other health conditions). In summary, all participating learning institutions were public schools which included special primary schools (3), special units integrated into the regular primary school (6), and a high school (1). The primary and secondary schools admitted all gender. In both primary and high schools, the total average number of student enrollment was 108.4 (pre-COVID-19) and 99.2 (post-COVID-19). Primary schools were nonresidential, while secondary schools were both residential and nonresidential. Learning was carried out through a Kenyan Curriculum for grades 1-8 (for primary schools) and grades 1-4 (for the secondary school) (Kenya Institute of Curriculum Development, 2016). The religious organization ran some schools/units. The schools had teaching and non-teaching staff. The Kenya Government posted all teachers through the Teachers Service Commission. Besides, the schools were composed of male and female non-teaching staff, including secretaries, cooks, drivers, and security people. The average pupil-to-classroom ratio was 40.4:1, and the average pupil to toilet ratio was 36.7:1. The average number of classrooms was 10. Also, there was an average of 3 boys toilets, 8 girls toilets, and 4 teachers toilets. (KNBS, 2019).

Participants

The sample size had 30 participants as a minimum number. Participants had different disability identities, both physical and mental disabilities either congenital or acquired before age 10. The age of the participants ranged from 12 to18 years. Among the participants (n=30), twenty were female and ten male. Geographical distribution of the participants: The majority of the thirty

participants were from Kakamega county. However, five were from other counties, three from Vihiga County, one from Uasin Gishu County, and two from Bungoma county.

Data Collection

The data collection was done using non-participant observation and a survey in February 2021 to assess the impact of the COVID-19 pandemic on students with special needs during school closure and after schools reopened for face-to-face learning for grades 4, 8, and 12.

Guided by Bandura's (1979) three basic models of observational learning, the first author observed participants' involvement in education, which involved descriptions and explanations of participants' behaviors. This was followed by analyses of participants' behaviors based on the data responses to discern the functional value of individual behaviors and the value of education to participants. The non-participant observation involved the researchers observing participants without actively engaging in their schooling processes (Marietto, 2018; Williams, 2008). The unstructured observation method was used to collect data on learners' schooling; its free and open manner allowed the collection of rich information that met the purpose of the study. This helped researchers to understand how students with special needs navigated the school system once back to school after over nine-month school closure and online learning.

Besides, a survey (Calder, 1998) of participants was conducted at a safe place and focused on how their learning happened during school closure and how they felt and responded to learning activities in school after the re-institution of physical learning. Sample survey questions were: To what degree did school closure affect your education. To what extent did virtual learning jeopardize your education. Challenges with virtual learning affected my education. Fear of contracting COVID-19 lowered my grades. COVID-19 pandemic decreased my learning effectiveness. Virtual learning affected the possibility of transitioning to the next grade next year. Virtual learning affected my academic preparedness. COVID-19 pandemic affected timely access to learning materials. Sample Likert-type questions on a scale of five responses were: Greatly affected, Considerably affected, Moderately affected, Slightly affected, not affected.

Data Analysis

Data were exported in Excel and statistically analyzed using the t-Test: Paired Two Sample for Means. Descriptive statistics were staged as counts and percentages to abridge the gathered data. A 5-point Likert Scale was used to determine the impact of COVID-19 on students with special needs' academic performance and the level of inclusion in online learning. Responses were converted into numeric values as follows (Greatly affected = 5 points; Considerably affected = 4 points; Moderately affected = 3 points; Slightly affected = 2 points; not affected = 1 point (Mayer & Cavallaro, 2019).

The integrity of the Study

Whereas the study was subject to the usual vicissitudes of exploratory research, measures were taken to ensure the integrity of the study. Before distributing the survey and conducting the observation, the participants were informed of the study's purpose, the timeline, the areas to be explored, and their voluntary participation. The participants were also informed that their data would be analyzed and processed. It will only be used for the study's purpose. All identifiers would be removed in the aggregated results. All the contacted participants accepted to participate willingly. No identifiable materials are included for the privacy of participants (i.e., pseudonyms are used throughout the paper).

Results

The following data reflects the results from thirty participants from ten schools in Kakamega County, Kenya. Results are presented based on the hypotheses— one focusing on the impact of the COVID-19 pandemic on the academic performance of students with special needs, and two focusing on the level of inclusion of remote learning. These areas are explored below.

The Impact of COVID-19 on Students with Special Needs' Academic Performance

Assessment of the impact of the COVID-19 pandemic on education and academic performance of students with special needs reveals negative consequences of school closure on the education and inclusion of students with special needs. The gathered data shows that most students, 90% (n = 27), believed that the COVID-19 epidemic affected their general academic performance distinctly. 36.7% (n = 11) of the student participants were greatly affected by the pandemic. In comparison, 16.7% (n = 5) were considerably impacted, 26.7% (n = 8) moderately impacted, and 10% (n = 3) were slightly affected, whereas 10% of the students, (n = 3) reported that COVID-19 pandemic did not impact their general academic performance (Table 1). Conversely, the data collected shows that the pandemic had a significant impact on the education of students with special needs, with 60% (n = 6) of the schools reporting a dropout after lockdown (Table 2).

Table 1. ***Impact of COVID-19Pandemic on academic performance***

Participants (n=30)	5 (Greatly affected)	4 (Considerably affected)	3 (Moderately affected)	2 (Slightly affected)	1 (Not affected)
Grade 6	6	3	4	2	1
Grade 7	5	2	4	1	2
Total	11	5	8	3	3
Percentage	**36.67%**	**16.67%**	**26.67%**	**10%**	**10%**

Table 2. ***School population before COVID-19 and after***

Schools	Population Before COVID-19	Population After COVID-19	Deviation
Amy Special High School	167	145	-22
Eva Primary Special School	120	116	-4
Kiln Primary Special School	76	54	-22
Manchester Special Unit	17	15	-2
Nile Special Unit	15	7	-8
Chacko Special Unit	9	3	-6
Cancun Special Unit	356	345	-11
Soil Special Unit	300	288	-12
Robin Special Unit	6	4	-2
Kayden Special Unit	18	15	-3
Total	**1,084**	**992**	

The Impact of COVID-19 on Students with Special Needs' Inclusion of Remote Learning

Remote learning broadened the physical contact between the learners and the teachers during content delivery. The government's regulations of social distancing induced this to limit the spread of the virus. As a result, face-to-face learning was substituted with online learning. However, the inclusion rate of students with special needs during remote learning was low, as shown in Table 3. 53.33% (n = 16) reported that remote learning was not completely inclusive. In comparison, 46.67% (n = 15) noted that remote learning was inclusive in different ranges.

Table 3. ***Level of inclusion in remote learning compared to face-to-face learning***

Participants (n=30)	**5 (Very inclusive)**	**4 (Considerably inclusive)**	**3 (Moderately)**	**2 (Slightly inclusive)**	**1 (Not inclusive)**
Grade 6	0	1	3	3	9
Grade 7	0	1	4	3	7
Total	0	2	7	6	16
Percentage	**0%**	**6.67%**	**23.33%**	**20%**	**53.33%**

However, the inclusion rate of students with special needs during remote learning was low. Most participants stated that they did not engage equally in the online learning between the teachers and the nondisabled students because they did not invite them to participate. This problem was compounded by the unavailability of parents who had to eke out a living despite the lockdowns, or those who were computer illiterate, or parents who could not read and write in English and Kiswahili, the official Kenyan languages. Both languages are lingua franca, but English is the dominant instruction language in schools. It was also noted that only the students whose parents could aid them in the school matters could participate successfully during the online learning process.

Some factors that students reported to hinder their inclusion in online learning included lack of relevant technology (e.g., computers and assistive technologies such as apps that can read the texts or dictation apps that can help with writing), Internet, and lack or limited or unreliable electricity. For example, many homes in Kakamega County lack or have unreliable power or Internet, and many homes are less structured to support electrical equipment/devices. In addition, some participants mentioned a lack of experience in using educational technologies and assistive technologies, including computers, and a lack of the required guidelines to support parents and teachers in helping children with special needs conduct lessons and tasks. Besides, a lack of interpreters online and at home (e.g., Kenya Sign Language for the deaf) and modification of learning materials (e.g., unavailability of braille materials for the blind or visually impaired) and failure to implement individualized educational programs also contributed to low inclusion of students with special needs during online learning.

As shown in Table 4, virtual classes, unlike physical classes, negatively impacted the academic wellbeing of students with special needs.

Table 4: ***Test of Significance at alpha=0.05***

t-Test: Paired Two Sample for Means		
	Variable 1	*Variable 2*
Mean	108.4	99.2
Variance	16472.26667	15720.4
Observation	10	10
Pearson Correlation	0.998478986	
Hypothesized Mean	0	
Df	9	
t Stat	3.828904293	
P(T<=t) one-tail	0.002017244	
t Critical one-tail	1.833112933	
P(T<=t) two-tail	0.004034489	
t Critical two-tail	2.262157163	

Using the results from (Table 4), we can clearly note that, Test statistic = 3.8289, P-value = 0.00403, and T critical value = 2.262. Therefore, since the t statistic value = 3.8289 is greater than t critical value = 2.262 and the P-value = 0.00403<0.05, we reject the null hypothesis and conclude that COVID-19 negatively impacted education for students with special needs.

Discussion

This research aimed to identify the effect of the COVID-19 pandemic on students with special needs in Kenya during and after school closure with a particular interest in their academic performance and the level of inclusion of remote learning and to suggest ways education of students with special needs in Kenya can be improved.

The COVID-19 Impact on Education of Students with Special Needs

This study's outcome shows that students with special needs in Kakamega County encounter multiple education challenges because of the spread of the COVID-19 pandemic, including physical distancing, closing schools, and lack of relevant support and the shift to virtual learning. The confronts match with prior suggestions (UNICEF, 2020a; World Health Organization &World Bank, 2011) that social distancing and changing the learning format and other economic factors can negatively impact children with special needs and their families. According to the present research, similar outcomes to face-to-face learning settings, participation rates, and advantages from virtual learning for students with special needs are low. However, modifying this format to the stu-

dent's individual needs and promoting an inclusive and helpful distance education system is among the key conditions of global educational organizations (UNESCO, 2020c; UNICEF, 2020b). Furthermore, the present study identified multiple educational challenges encountered by the students with special needs connected with a lack of inclusion during the COVID-19 pandemic, including lack of previous experience with distance learning, insufficient technology, lack of support and services, and interpretation where needed. These findings back the results from other current research before and after the pandemic (e.g., Crow, 2008; Kinash et al., 2004; UNESCO, 2020c).

Moreover, our study reported numerous factors that influenced academic performance, inclusion level, and school dropout during the COVID-19 pandemic. First, the change to online learning as an alternative to limit contact between the students or teachers was not fully inclusive to students with special needs. The majority of the students with special needs did not have access to (adequate) online teaching and learning. Lack of either the means (e.g., limited/lack of infrastructure—Internet, electricity, lack of homes, or unconducive home atmosphere) or the materials (e.g., computers, books) and education experts, including teachers, made online learning processes difficult. These results match previous research findings that scarce resources and supports hurt access to quality education of students with special needs (Etherington, 2020; Moner-Girona et al., 2019; Ressa, 2020). As a result, virtual education was not (adequately) made accessible to them. Thus, because of the financial and digital divide, among other obstacles, children and youth with special needs, compared to nondisabled students and peers from well-endowed families, were majorly excluded from education during school closure at the height of the COVID-19 epidemic (National Council on Disability, 2020; UNESCO, 2020b; UNICEF 2020b). Undertaking online classes impacted the education of students with special needs; a decrease in students' academic progress and achievement has been linked with taking virtual classes instead of traditional face-to-face learning (Bettinger et al., 2017). The COVID-19 lockdown had a negative effect on the education of students with special needs. The pandemic affected the rate of income to their parents, forcing some of the students to work to support their families; this resulted in deficient performance in schools and school dropouts, significantly affecting their education. Besides, low-income families saw parents forced to make a living, thus leaving children unsupervised in the homes, contributing to truancy, demotivation, sexual contacts, and increased teenage pregnancies, which again match previous reports (Muhumuza, 2020; Ressa, 2020; UNESCO, 2020d).

Challenging the Deficit Culture in Kenyan Education System

As revealed by our study, the inclusion rate of students with special needs during remote learning was low, which can be linked to the culture of

deficit (Bunning et al., 2017; Kiru, 2019). Many stakeholders in education, including educators and policymakers, do not value the schooling of students with special needs because, traditionally, they have been thought of as unworthy beings that drain societal resources (Danforth, 2014; Prince, 2009). This view undeniably remains strong among Kenyan educators and politicians, making it difficult to commit resources for the development of universal infrastructure or implementation of universal design of learning (Crockett et al., 2019). However, accessible environments generally enhance inclusion, and inclusion encourages nurturance of climate and culture of tolerance essential for students with special needs (Danforth, 2014; Gabel & Connor, 2014) and the broader disability community (Devlin & Pothier, 2006). Additionally, inclusion enhances interactions between students with and without special needs and, in the process, allow conversations and learning and re-learning from each other, which often results in an exchange of the dominant culture and the disability culture—and many times the discussions lead to exposure to disability myths and stereotypes and correction of prejudices (Danforth, 2014; Gabel & Connor, 2014). In the process of that exchange of cultures, people are disabused; malpractices are identified, discussed, and addressed; and tolerance is cultivated (Devlin & Pothier, 2006). All these enhance inclusion and belonging of students with special needs in schools. Meanwhile, such inclusive environments afford students with special needs opportunities to learn norms and social mores and acquire appropriate skills essential for school participation and community living (Bandura, 1979; Cole, 1996; Wertsch, 1991).

The social learning theory posits that learning is socially mediated and that students are more likely to acquire functional skills essential for community living in social settings that are of microcosm of their community than in simulated or segregated learning environments (Gutiérrez et al., 1999; Lave & Wenger, 1991; Vygotsky, 1978). Learning occurs through scaffolding, reciprocal teaching, and collaborative learning when learners interact with peers and teachers, and other stakeholders in the community (Vygotsky, 1978). Learning also happens when social agents enable learners to appropriate their thinking tools to acquire knowledge and skills essential to function in the community (Bandura, 1979; Cole, 1996). The social contexts provide opportunities for social exchange and acquisition of cultural tools necessary for the learner to engage in critical thinking and be involved in problem-solving, remembering, and therefore executing actions essential for survival or living in the community (Wertsch 1985).

Furthermore, social learning theorists postulate that in the event of social interactions, the learner observes and imitates, and internalize external stimuli or messages or information, which allows them to transform themselves in ways that they can appropriate the comprehended information to manage

their environments (Bandura, 1979; Cole, 1996; Vygotsky, 1978). Thus, inclusive learning settings are important for students with special needs' exposure to community culture and learning norms and behaviors. Exposure to cultures of various communities happens when they interact with peers, teachers, and parents/caretakers in different physical and virtual settings. Students with special needs learn social mores through these interactions, allowing them to grasp these cultures and develop their survival or adaptive tools (Danforth, 2014; Lave & Wenger, 1991; Vygotsky, 1978). As advanced by social learning theorists, comprehension of cultures involves an individual integration of external information from their environments (Bandura, 1979; Cole, 1996). However, the movement from the social plane of functioning to the individual and inner plane of functioning requires active engagement by children and youth in social interaction with peers and other supportive adults such as educators. Social interaction involves verbal and nonverbal communications, and through speech and gestures, the learner learns how to regulate joint attention, to identify and label objects, to classify and elaborate on experiences, and offer explanations to matters around them (Cole, 1996; Gutiérrez et al., 1999; Lave & Wenger, 1991). Unfortunately, for students with special needs in our study, virtual learning fell short of achieving its intended goal of bridging schooling gaps caused by school closure.

As in our participants whose inclusion in the online education was limited, students with special needs are rarely provided with social environments to interact with community members to nurture their academic and socio-emotional repertoires. The reality is that students with special needs lead a very restrictive life primarily because of prejudices and biases, which always manifest in environmental barriers. Many children and youth with special needs live isolated life at home and in schools. Many times they are chained and never allowed to interact with the outside world. In situations where they are allowed to interact with the outside world, many find themselves in special schools or special units or other segregated learning settings where they are held in low expectation, denied resources and supports, and denied learning opportunities to grow and develop (Danforth, 2014; Gabel & Connor, 2014; Kiru, 2019). Children and youth with special needs habitually only interact with adult caretakers, including special education teachers, which denies them access to age-appropriate behaviors of peers. Placements of students with special needs in segregated learning spaces happen because they are assumed incompetent in social and academic skills to be in general classrooms. Their placement in inclusive learning settings is contingent upon their acquisition of social mores and adherence to the dominant norms. They must acquire academic and social competencies before they are placed in regular schools or general classrooms with nondisabled learners, even though their segregation denies them exposure to appropriate social mores. Often segregated settings augment wrong behaviors. This happens because

segregated settings lack the rich community cultures that naturally exist in the general classrooms. Unfortunately, the less enriched culture of segregated environments makes it difficult for students with special needs to learn appropriate manners quickly.

Consequently, years of segregation usually do not translate to the acquisition of social and academic competencies. Instead, years in segregated learning settings typically lead to slow learning of social mores or regression of behaviors to the disadvantage of students with special needs and nondisabled learners. Segregated learning spaces do not enable learners with special needs to acquire emotional, social, and academic skills at a pace that surpasses their aging rate. Since the restrictive home and school environments make it hard for children and youth with special needs to be exposed to the rich climate and culture of the broader community, many age out and are forced to exit school with limited social and educational skills. This further predisposes them to failed adulthood. Those that exit school inadequately prepared for the non-segregated adult life usually fail to realize post-primary school and post-secondary school outcomes—employment, community living, independent living, participation in leisure and recreation, and community participation (Getzel & Thoma, 2008; Sitlington et al., 2009).

Limited inclusion or total exclusion of students with special needs is associated with the culture of deficit (Gabel & Connor, 2014) that has circumscribed governments and communities' investments in accessible environments, including implementation of universal design of learning (Bunning et al., 2017; Crockett et al., 2019; Danforth, 2014; Gabel & Connor, 2014). Frequently students with special needs deal with exclusionary practices that deny them opportunities to grow and develop their self-determination qualities in ways that nondisabled peers do (Ahmad & Thressiakutty, 2018; Millen et al., 2019). In particular, inaccessible learning settings hurt their education in multiple ways. Usually, barriers stimulate students' self-determination; however, continuous exposure to hurdles, especially the culture of deficit, limits students with special needs' interactional opportunities with nondisabled peers in ways that leave them demotivated. Constant experience of barriers hurts students with special needs' self-determination—it harms their functionality, self-motivation, and self-efficacy, especially when difficulties make them internalize that the unfavorable circumstances are beyond their control. Moreover, barriers to quality education deny both children and youth with and without special needs learning opportunities, although these are essential for acquiring social mores and knowing the community resources (Gutiérrez et al., 1999; Lave & Wenger, 1991). Students with special needs are left unprepared and/or underprepared for disasters (UNISDR, 2015), which again negatively impacts their citizenry roles such as involvement in community development (Prince, 2009).

Inclusive Disaster Management and Recovery Programs

Worldwide school closure early 2020 to mitigate the spread of COVID-19 virus disrupted schooling of over a billion student population including those with special needs (UNESCO, 2020a). The COVID-19 protocols like social distancing and restrictive movements altered traditional educational practices. School closures hurt the academic performance of students with special needs due to their low inclusion in remote learning. The sudden change to virtual learning created accessibility difficulties that compounded the existing problems, including lack/limited online learning opportunities, lack/limited educational and assistive technologies, biases and stresses Kenyan children and youth with special needs regularly experience due to pre-existing conditions, family economic hardships, and deficit culture. Since the pandemic made learners with special needs' education more complex, the Kenyan government must include them and their families in all the community disaster management and recovery programs.

During independence from Britain in 1963, Kenya prioritized war on poverty, ignorance, and disease to uplift all citizens' welfare (Mazrui & Wiafe-Amoako, 2015; Sifuna & Otiende, 2006; wa Thiong'o, 2011). Until now, Kenya is still wrestling with these problems, as hundreds of thousands of learners with special needs are left behind by the education system (Bunning et al., 2017; Kiru, 2019). Sadly, the Kenya government during independence and the subsequent governments have less valued education of children and youth with special needs. Instead, the government's role of providing quality education to school-age children with special needs has been relegated to the nongovernmental organizations (NGOs) such as religious institutions (Chikati et al., 2019). As a result, the education of children and youth with special needs is mainly in the realm of NGOs (Gebrekidan, 2012; Ressa, 2020). This trend is changing but has not gained momentum within Kenyan society. In the 1980s and later 2000s, Kenya enacted disability policies and laws (e.g., Persons with Disabilities Act 2003, the Constitution of Kenya 2010, the Children's Act 2001, and the Basic Education Act 2013) and signed international treaties (e.g., the Convention on the Rights of Persons with Disabilities 2006) to promote rights of disabled people (Kiarie, 2014). Still, children and youth with special needs endure neglect that predisposes them to low academic performance and unsuccessful adulthood.

Some of the problems affecting the education of children and youth with special needs emanate from international forces. For example, in the 1990s, Kenya implemented the World Bank (WB) and the International Monetary Fund (IMF) economic austerity programs that led to privatization of government entities and government's disinvestments in social programs such as education and healthcare (Kiru, 2019; Oketch & Rollestone, 2007). The IMF and

WB's structural adjustment programs to freeze the government employment, including teacher employment by the Ministry of Education starting in 1998, resulted in inadequate training of teachers and subsequent teacher shortages (Ressa, 2020). The resultant catastrophic effects further pushed low-income families into poverty, limiting access to (quality) education. Thus, years of Kenya governments disinvestments in the larger disability community continue to haunt school-age children and youth with special needs. Many unimplemented education policies have caused a shortage of resources and services in learning institutions creating ripple effects that continue to disadvantage students with special needs and disabled citizens, in general. Limited/lack of implementation of laws and policies, limited/lack of investment in education, and misplaced priorities have caused lost time and increased oppression of children with special needs. Thus, COVID-19 related issues have compounded historical problems in education (e.g., segregation in schools), afflicting children and youth with special needs in ways that have denied them access to quality education. Consequently, students with special needs have been pushed further to the periphery of Kenyan society. The Kenya government's disinvestment in the education of children and youth with special needs is akin to what Prince describes as an intentional governments' war against the disabled people to keep them in the status of second-class citizens (2009).

Our study reveals that the COVID-19 pandemic disadvantaged children and youth with special needs. Education has been inaccessible for most children and youth with special needs even before the COVID-19 outbreak (Ressa, 2020). A study by the Ministry of Education Science and Technology in collaboration with the Voluntary Service Overseas revealed that over 90% of children with special needs did not access Basic Education (MoEST & VSO, 2014). An earlier report by the MoE (2009) estimated 750,000 school-age children with special needs never receiving Basic Education. Yet, education remains key in poverty eradication. Kenya aims to achieve the UN 17 Sustainable Development Goals (SDGs) adopted by world leaders on September 25, 2015, to end poverty, among other intentions (B1G1 Business for God, n.d.; UNESCO, 2020d). However, current pandemic, economic and political problems, including increased foreign debt due to COVID-19, negatively impact Kenya's capacity to substantively allocate resources in providing quality education to vulnerable school-age children (Ressa, 2020). Our research already revealed that disasters are likely to stall or even roll back gains in education that Kenya started by implementing universal primary education in 2003 and universal secondary education in 2008 (Adan & Orodho, 2015; Ressa, 2020).

Education is a critical element in poverty eradication and a vital part of the disaster management and recovery process (International Monetary Fund, 2020; UNISDR, 2015). The 1994 UNESCO Salamanca Statement, which

Kenya adopted, requires nations to design educational systems and implement educational programs that meet the educational needs of different learners (UNESCO, 1994). Also, the Convention on the Rights of Persons with Disabilities 2006, which Kenya ratified in 2008, requires Kenya to promote the rights of disabled citizens (Kenya National Commission on Human Rights, 2016). Then, the Kenyan central and county governments need to institute disaster management and recovery programs that target and include children with special needs, their families, and educators (Moyi, 2019; UNISDR, 2015). The Kenya education system's unresponsiveness to the learning needs of millions of school-age children with special needs demands revisitation of the curriculum (Kenya Institute of Curriculum Development, 2016; n.d., Kenya Institute of Special Education, 2018). Importantly, teacher preparation programs must instill appropriate pedagogical skills in teachers to prepare them for students' different learning needs, especially those with special needs. All stakeholders in education can participate in the disaster management and recovery process through education. In particular, teachers must be prepared for different teaching and learning modes, including face-to-face learning, e-learning, blended learning, and flipped classroom (Thai et al., 2020) so they can provide education to all students, all the time, and anywhere—physical or virtual (Danforth, 2015; Gabel & Connor, 2014). The involvement of educators and students with special needs and their families in disaster management and recovery programs is vital for Kenya's achievement of Vision 2030 (KNBS, 2019), the Education for All 2030 (UNESCO, 2016), and UN 17 SDGs 2030 (UNESCO, 2020d). Having all stakeholders in education, especially students with special needs and their families, engaged in education will increase the government's efficiency in mitigating current and future pandemics and ensuring that Kenya achieves various goals, including poverty eradication.

Conclusion

The present study showed that the COVID-19 pandemic affected most student participants' education and academic performance in differing degrees. Remote learning gave the students a chance to self-study. Still, lack/limited resources and services hindered (quality) schooling of school-age children and youth with special needs. Inadequate infrastructure—electricity and Internet connection, lack of required technology (e.g., computers and their applications), lack of previous knowledge about online learning (on the part of students, their families, and teachers), economic constraints, and lack/limited of support from the central and county governments, families, and educators, and unavailability of inclusive learning materials and incompetency of teachers in online content delivery methods, all these made the whole learning experience difficult (during school closure to mitigate the spread of COVID-19 pandemic) leading to low

academic performance and school dropouts. Therefore, the Kenya government should be able to plan to envision smooth learning in critical circumstances such as the C0VID-19 pandemic and, among others, to radiate in the future to guarantee that students with special needs do not experience low academic performance, drop out of school or lose out on real learning moments that could affect their developmental landmarks and successful post-school outcomes—employment, community living, independent living, participation in leisure and recreation, and community participation. Thus, alternate means to progress education for students with special needs must be a top priority for the Kenyan governments to ensure that disruption to the education sector is limited. There should also be disaster education and other measures to mitigate any developing issues and ensure that the Ministry of Education of Kenya and local and global partners can deliver access to quality, equitable and inclusive education to all students, especially those with special needs during and after a disaster in order to guarantee progressive learning.

Limitation and Future Research

This study focused on the impact of the COVID-19 pandemic on the education of children with special needs in Kakamega County, Kenya, and so may not reflect the situation in the whole country. Important was how the government's COVID-19 mitigation measures, such as school closures, have negatively impacted schooling of students with special needs. Future studies should examine the preparedness of stakeholders in education, including students with and without special needs and their families, educators, and central and county governments' preparedness to mitigate the effects of disasters on schooling of students with special needs in Kenya. Moreover, future studies may compare the academic performance and school dropouts of learners with and without special needs due to pandemics. Despite its limitations, this study identifies that the COVID-19 pandemic caused low academic performance, less degree of inclusion in remote learning, and school dropouts and, therefore, negatively impacted current and future status of students with special needs in Kakamega County. It also points out that there is a need for central and county governments to invest in digital infrastructure and the training of educators and families competent in disaster management and recovery processes through education in order to reduce the toll of disasters on the wellbeing of children and youth with disabilities.

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