

African Journal of Education and Practice (AJEP)

**THE IMPACT OF COVID-19 PANDEMIC ON THE EDUCATION SYSTEM IN
DEVELOPING COUNTRIES**

David Willies

The Impact of COVID-19 Pandemic on the Education System in Developing Countries



^{1*}David Willies

Postgraduate Student, Jomo Kenyatta University of
Technology and Agriculture

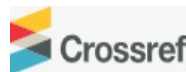
*Corresponding Author's Email: info@iprjb.org

Article History

Received 28th February 2023

Received in Revised Form 4th March 2023

Accepted 22nd March 2023



Abstract

Purpose: The purpose of this study is to investigate the impact of COVID-19 on the education systems in developing countries.

Methodology: The study adopted a desktop methodology. Desk research refers to secondary data or that which can be collected without fieldwork. Desk research is basically involved in collecting data from existing resources hence it is often considered a low cost technique as compared to field research, as the main cost is involved in executive's time, telephone charges and directories. Thus, the study relied on already published studies, reports and statistics. This secondary data was easily accessed through the online journals and library.

Findings: The findings of the study revealed the existence of a contextual and methodological gap relating to the impact of COVID-19 on the education systems in developing countries. Preliminary empirical review found that in the world, most schools, colleges, and universities are closed to control the spread of the COVID-19.

Unique Contribution to Theory, Practice and Policy: The Disruption theory, Social Learning theory and the Cognitive Load theory may be used to anchor future studies on the impact of COVID-19 on education systems in developing countries. The COVID-19 epidemic has forced all educational institutions worldwide to adopt online teaching and learning. Governments should therefore increase network connectivity and infrastructure in both urban and rural locations. The nations should develop a plan to scale educational technology, set up educational websites with no fees, and provide online teaching and learning materials.

Keywords: *Coronavirus, Developing Country, Distance Learning, Education System, Impacts of COVID-19.*

©2023 by the Authors. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<http://creativecommons.org/licenses/by/4.0/>)

INTRODUCTION

According to Tadesse and Muluye (2020), the COVID-19 virus is a pandemic that has had a notable influence on global educational systems. The COVID-19 pandemic has had an impact on the worldwide education system, as acknowledged by UNESCO (the United Nations Educational, Scientific, and Cultural Organization) (UNESCO, 2020b). Throughout human history, numerous pandemics have occurred, each of which has impacted various aspects of human life, such as life expectancy, educational access, and global economic well-being (Editors, 2020). The World Health Organization (WHO) (WHO, 2020a) declared coronavirus (COVID-19) a pandemic on March 11, 2020, following its spread to 114 nations within a period of three months and infecting over 118,000 individuals globally.

The initial incidence of COVID-19 was reported by the Wuhan Municipal Health Commission in Hubei Province, China on December 31st, 2019 (WHO, 2020b). The COVID-19 pandemic has rapidly disseminated and presently impacts 213 nations and territories worldwide. As of September 17, 2020, the global count of COVID-19 cases was estimated to be around 30,086,319, with approximately 21,833,645 individuals having recovered and 945,962 fatalities reported. According to data provided by Worldometer in the year 2020. According to a report by Medical News Today (2020), researchers express concern over the swift transmission of the coronavirus, prompting numerous countries to implement stringent quarantine measures and shut down schools in an attempt to curb the proliferation of the disease. Governments are prioritizing the provision of essential commodities, the establishment of medical facilities and laboratory centers, the identification and naming of the virus, as well as the education and training of health personnel, in their efforts to combat the ongoing pandemic (Atif & Malik, 2020). Education is a fundamental aspect of a nation's development, serving as a critical component of its eventual triumph. The educational system has been affected by various challenges, including changes in curricula and school closures resulting from pandemics, as noted by Owusu-Fordjour *et al.* (2020).

According to UNESCO (2020b), the COVID-19 school closures have affected a significant proportion of the global student population, specifically 87 percent. UNESCO is currently employing novel approaches to web-based instruction with the aim of extending educational opportunities to vulnerable young individuals. According to UNESCO's report, the COVID-19 epidemic has resulted in the cancellation of school for nearly 1.5 billion students across 195 countries. The COVID-19 pandemic has had a significant impact on various aspects of society, including the economy, daily routines, mental, emotional, and physical well-being, cultural and festive events, stress levels, closure of establishments such as hotels, restaurants, religious and entertainment venues, and losses in national and international business. Additionally, the pandemic has resulted in poor cash flow in the market and restricted national and international travel. (Onyeaka *et al.*, 2021)

Subsequently, an economic shock ensued as numerous developing countries implemented measures to curtail the spread of the disease by decelerating their economies. As per Okubo's (2020) findings, developing countries have experienced a significant economic decline and extensive closures of their educational and transportation systems, which is unprecedented in history. Distance learning solutions encompass a variety of platforms, educational applications, and resources designed to support educators, parents, and students in their pursuit of academic

goals. According to UNESCO (2020a), there exist various educational tools such as Learning Management Systems (LMSs), Massive Open Online Course (MOOC) platforms, and Digitally Delivered, Independently Studied Materials (DLCs). Distance education poses difficulties for educators, students, and families in developing nations owing to insufficient internet access, information technology, educational resources, and digital literacy skills (Ferri *et al.*, 2020). In certain impoverished nations, radio, television, and the internet are employed as educational tools for instructing students.

However, households and students who are economically disadvantaged face challenges in accessing the necessary resources to facilitate home-based learning, including radios, televisions, and computers. Belay (2020) notes that in certain developing countries, underprivileged students are provided with assistance in the form of educational resources such as textbooks, radios, tools, and educational guides. This study critically analyzed and synthesized literature pertaining to the impact of the coronavirus pandemic on educational institutions, including its effects on various stakeholders such as students, teachers, parents, and children. Additionally, the research explored strategies and suggestions for ensuring continuity of learning amidst the outbreak. The text discussed the challenges and potential advantages of remote and virtual learning, alongside an evaluation of the current state of the education sector in the aftermath of the COVID-19 pandemic.

In order to mitigate the worldwide dissemination of the COVID-19 pandemic, the majority of countries have implemented temporary closures of childcare facilities, primary and secondary educational institutions, as well as post-secondary establishments (TUAC Secretariat Briefing, 2020). The COVID-19 pandemic has had an impact on educators and caregivers globally. As per a report by UNESCO (2020b), the number of students who are currently unable to attend school due to closures stands at over 1.5 billion across 195 countries. Pujari (2020) posits that the impact of COVID-19 on the educational system will be extensive, encompassing various aspects such as assessments and appraisals, the commencement of a fresh semester or term, and conceivably, the duration of the academic year.

The global dissemination of the COVID-19 virus has posed a formidable obstacle to the realm of education. The article by Crawford *et al.* (2020) examines and evaluates the intra-period reactions of the higher education systems of 20 nations. The authors arrived at the determination that the adoption of socially distancing measures in the realm of higher education requires expeditious modification of course content to accommodate fully online learning environments. The closure of schools in India has presented challenges for children, educators, and parents, as reported by Selvaraj (2021). Online education poses a challenge for low-income families and students, while also offering a viable and suitable alternative solution. According to UNESCO, the COVID-19 pandemic has resulted in the absence of in-person classes for approximately 90% of students worldwide.

Currently, educational institutions worldwide remain closed, resulting in an impact on over 1.5 billion students encompassing those in kindergarten through college. The global student population is estimated to be 826 million, of which 43% (706 million) lack access to home computers and internet. Moreover, approximately 56 million students encounter hindrances in utilizing their mobile devices due to coverage inadequacies. Across the 21 nations comprising Sub-Saharan Africa, there are approximately 216 million schools. An overwhelming majority of

students, specifically 82%, do not possess computers, while an equivalent percentage lack access to home internet. Furthermore, 11% of students do not have the means to connect to mobile networks. Moreover, an estimated 56 million students in Sub-Saharan Africa lack access to mobile networks. The current global health crisis underscores the necessity for an increased number of educators possessing specialized knowledge in information and communication technology. In primary schools of developing countries, there exists a significant disparity between the number of students and the availability of qualified teachers, with up to 60 students awaiting each teacher (UNESCO, 2020b; O'Hagan, 2020). The COVID-19 pandemic presents considerable challenges in maintaining a consistent school schedule in developing nations.

Avanesian *et al.* (2021) report that governments in countries with diverse levels of economic development employ diverse distance learning methods to maintain educational continuity during school closures. Approximately 90% of nations with high-income utilize online delivery, while an additional 20% employ a hybrid approach that combines broadcast and online delivery. In upper-middle-income nations, over 70% of educational opportunities consist of a combination of online and broadcast modalities. Approximately 66% of lower-middle income countries provide a type of education that is either broadcasted or available online. In developing nations, the utilization of television and radio for educational purposes is below 25%. Numerous countries across Europe, Central Asia, East Asia, the Pacific, the Caribbean, and Latin America have implemented distance learning as a means of educating their rural student populations. This approach involves the utilization of either fully online learning or a combination of broadcast and online learning. Approximately 28% of nations situated in North and Middle East Africa exclusively depend on radio and television as their primary means of educational instruction. Conversely, less than 40% of these countries rely solely on online learning, while 22% utilize a combination of both radio/television and online learning modalities. According to the data, 40% of South Asian nations employ broadcast education, while 50% utilize a blend of broadcast and online education. According to Wodon's (2020) findings, a mere 11% of Sub-Saharan African nations have exclusively adopted online education, whereas 23% have resorted to a combination of broadcast and online modalities.

Regrettably, a significant proportion of students residing in low- and middle-income nations are unable to avail the educational prospects offered by broadcast and online learning, as per the findings of Jordan *et al.* (2021). It is recommended that governments allocate resources towards the professional development of educators by offering training in technology-mediated instruction amidst the COVID-19 pandemic. 50% of the nations situated in the South Asian region provide assistance to instructors through the provision of instructional sessions and mentorship. More than 50% of educational institutions in Europe, Central Asia, North and Middle East Africa, as well as the Caribbean and Latin America, and 40% of those in the Pacific and East Asia, allocate resources towards teacher education. Regrettably, according to Vegas (2020), educators in Sub-Saharan African nations are not adequately prepared. The report concludes that the COVID-19 pandemic will have a substantial impact on the worldwide education system. The education system in low-income countries is notably affected and faces challenges in delivering distance learning and teacher training, as per the findings of Lorente *et al.* (2020).

During the period of school closures, a concerted endeavor is being undertaken by a group of professionals including researchers, curriculum designers, education officers, and educational

institutions to restructure the educational system. The educational community bears the responsibility of curriculum development, preparation of learning strategies and techniques in the post-COVID-19 era, and implementation of system-wide educational reform. Utilizing the present time to enhance the educational system through endeavors such as curriculum refinement, cooperative efforts, competency enhancement, and the formation of novel educational establishments holds significant importance. The reopening of schools post the COVID-19 pandemic is anticipated to witness the return of children owing to the school's strategic planning aimed at compensating for the lost time of students, parents, and teachers, along with the school's endeavors to enhance the accessibility of distance learning, as per Dawadi *et al.* (2020). Collaboration between educators and school officials is crucial in disseminating information to parents and students regarding the significance of ensuring the safety of children at home during school closures. It is equally important to motivate them to maintain their learning and reading habits to the fullest extent possible (Tiruneh, 2020).

There are discernible differences between students who were raised in urban areas and those who were not, as well as between those whose parents attained a high level of education and those who did not. Hence, upon the reopening of schools, it is imperative for the education system to devise and execute evidence-based measures that seek to expedite the recuperation of the diminished percentage. The absence of essential assistance amid school closures may result in a prolonged period for children from low-income and illiterate households to compensate for the educational time they missed. Individuals from economically disadvantaged backgrounds may face the dilemma of deciding between remaining at home and contributing to household responsibilities by engaging in manual labor as day workers during academic recesses. According to Mahmud (2021), parents residing in rural areas may exhibit reluctance in sending their children back to school, as they perceive that their children's contribution to the family farm or cattle herding may be more beneficial.

It is recommended that educational institutions monitor the attendance of their students and develop strategies to alleviate parental concerns regarding their children's absence from school, even in the event of post-pandemic recovery (Tiruneh, 2020). The educational system requires strategies to adequately prepare educators and students to respond with efficiency and effectiveness during and after the COVID-19 pandemic. The traditional mode of in-person instruction may not always be the optimal environment for effective pedagogy or knowledge acquisition. In the aftermath of the COVID-19 pandemic, it will be imperative that students have received instruction in critical thinking and decisive action in emergency situations, utilizing a diverse array of pedagogical approaches. Therefore, it may be imperative for the global community to provide assistance to educational systems in developing nations as they strive to ensure the longevity and adaptability of their institutions, faculty, learners, and households (Pokhrel & Chhetri, 2021).

Statement of the Problem

The global COVID-19 pandemic has significantly impacted education systems worldwide, with developing countries experiencing particularly severe consequences. Frequently, these nations lack the financial resources, physical facilities, or technological capabilities to facilitate distance and blended education. According to Onyema *et al.* (2020), a significant number of students lack

access to quality education, amounting to millions. The ongoing pandemic has exacerbated pre-existing issues such as poverty, inequality, and limited availability of healthcare and education. The potential ramifications of this situation may have enduring impacts on the economic and social development of said nations. This study aims to provide a comprehensive understanding of the impact of COVID-19 on education in developing nations. The findings of this research will inform policy and practice, and facilitate the establishment of equitable and sustainable education systems in the post-pandemic era. Given the urgent need to address the impact of COVID-19 on education in developing countries, this study aims to investigate the impact of COVID-19 on the education systems in developing countries.

LITERATURE REVIEW

Theoretical Review

Disruption Theory

Clayton M. Christensen first proposed the concept of disruption in his 1997 book. This is a possible hypothesis regarding the potential impact of the COVID-19 pandemic on classroom teaching. The pandemic's disruption of the traditional model has compelled schools to expeditiously implement online and hybrid learning, as argued by Floris *et al.* (2020).

Following the cancellation of in-person sessions, educational institutions were compelled to expeditiously adopt online education. As a result of this unforeseen circumstance, there has been an increased need for ingenuity and flexibility within the educational setting. In response to the evolving needs of students, educational institutions and educators expeditiously implemented novel pedagogical strategies to facilitate teaching and learning. The aforementioned alteration has expedited the proliferation of technology-oriented learning environments and potentially holds significant implications for the trajectory of the educational landscape (Crawford, 2020).

The COVID-19 pandemic has highlighted the existence of educational inequalities. The potential exacerbation of the achievement gap is a concern if certain students are unable to engage in distance education due to insufficient access to requisite technological and material resources. As per the Disruption Theory, the current epidemic has necessitated that educational institutions and educators adopt innovative strategies to tackle the challenges and fulfill the needs of their pupils. As per advocates of the Disruption Theory, the COVID-19 pandemic has heightened the necessity for innovative and flexible teaching methodologies. The shift towards online and hybrid learning has presented challenges, however, it has also provided opportunities for educators and institutions to reassess and enhance established methodologies (Dhawan, 2020).

Social Learning Theory

Social Learning Theory is another theory by Albert Bandura that attempts to explain the impact of COVID-19 on education. According to Gopinathan *et al.* (2022), the COVID-19 pandemic has posed challenges to interpersonal communication and collaborative efforts in classroom settings, leading to adverse effects on student engagement and learning outcomes. In conventional educational settings, pupils acquire knowledge not solely from the instructor but also through peer-to-peer interactions. In academic settings, students engage in collaborative learning by means of exchanging ideas, posing inquiries, and collaborating on group assignments. However, due to the increasing prevalence of remote and hybrid learning, opportunities for social interaction and

networking have been significantly reduced. As a consequence, students may experience a sense of isolation and disengagement from the learning process.

According to the tenets of social learning theory, the process of learning is enhanced through active engagement with other individuals. The absence of face-to-face interaction between students and teachers may result in decreased motivation, engagement, and academic achievement. The absence of emotional and social support derived from being a member of a classroom community may also result in students being deprived of such benefits. Furthermore, the transition to remote instruction could potentially impact the caliber of pedagogy. In the absence of face-to-face communication with their pupils, educators may encounter challenges in establishing a vibrant and engaging educational setting. According to Aguilera-Hermida (2020), educators may encounter difficulties in providing individualized attention to each student, potentially leading to decreased student engagement.

The Social Learning Theory posits that the COVID-19 pandemic has brought about significant changes in the social aspects of the learning process, thereby presenting challenges for both educators and learners. In order to address these issues, it is imperative to generate novel concepts that foster communal engagement and collaborative efforts within virtual and blended pedagogical settings.

Cognitive Load Theory

Cognitive Load Theory coined in 1988 by John Sweller, attempts to explain the impact of COVID-19 on education. This theory says that the pandemic may cause more stress and anxiety, which could make it harder for students to learn and remember things. The COVID-19 pandemic has resulted in significant disruption and ambiguity, leading to heightened levels of stress and anxiety among students. According to Zhao and Hu (2021), the additional cognitive effort required may potentially impede students' ability to focus on their academic pursuits, thereby adversely impacting their academic performance.

Apart from the affective ramifications of the pandemic, the transition towards remote and hybrid pedagogical models could potentially augment the cognitive load imposed on students. As an illustration, learners may be required to acquire proficiency in utilizing novel technologies, effectively manage their personal time and agenda, and navigate the process of acquiring knowledge in a more self-directed environment. Singh and Singh (2021) suggest that the imposition of additional cognitive demands may potentially impede the effectiveness of the learning process. According to Cognitive Load Theory, it is imperative for educators to acknowledge the heightened cognitive demands placed on students during the pandemic, in order to optimize their learning outcomes. Educators have the ability to assist pupils in handling their cognitive burden through the provision of unambiguous and succinct directives, the division of intricate assignments into more manageable components, and the restriction of diversions.

According to Cognitive Load Theory, the ongoing pandemic has resulted in an increased cognitive load for students, thereby impeding their learning and retention abilities. In order to address these issues, educators must acknowledge the additional cognitive burden imposed upon learners and provide them with the necessary support to effectively manage their cognitive workload.

Empirical Review

Abumalloh (2021) conducted a study on the impact of coronavirus pandemic (COVID- 19) on education: the role of virtual and remote laboratories in education. The present investigation examines the anticipated advantages of electronic learning in the context of the COVID-19 crisis. A novel approach to investigating this matter was developed utilizing a survey of students enrolled at Imam Abdulrahman Bin Faisal University. Partial Least Squares Structural Equation Modeling (PLS-SEM) was employed on a total of 179 available responses. The present research employed the Push-Pull-Mooring theoretical framework to examine the impact of push, pull, and mooring factors on students' inclination to transition to virtual and remote educational laboratories. The findings indicate a significant correlation between the push factor, which refers to an external threat from the environment, and the perception of benefits. The impact of pull factors, namely the motivation for e-learning, perception of information sharing, and social distance, on the advantages for learners is significant.

Macharia (2021) sought to investigate the factors influencing education during the COVID 19 pandemic: a case of primary schools in Kajiado County. On March 13, 2020, the first case of COVID-19 was reported in Kenya. In an effort to curb the transmission of the virus, the Kenyan government implemented a temporary closure of public spaces. In order to ensure continuity of education, the Ministry of Education promoted the utilization of remote learning. However, the implementation of remote learning encountered numerous challenges. The present study examined significant factors that impacted education in Kenya amidst the COVID-19 pandemic. The study employed a descriptive survey research design. The primary target demographic consisted of first-grade students located in Kajiado County. The study involved participation from both educators and learners. The data was collected through the utilization of questionnaires, and subsequently analyzed descriptively. The findings indicate that the presence of ICT infrastructure, proficiency in digital skills, and financial constraints significantly impacted the educational outcomes of primary school students in Kenya, particularly those who lacked access to these resources.

Wambua (2021) also aimed to analyze the human rights dimension of a pandemic: an evaluation of the effect of COVID 19 on the right to education. The present investigation employed the Classical Liberal Theory of Equal Opportunities, originally proposed by John Locke in 1688, to elucidate the phenomenon under scrutiny. The research employed a mixed-method design, utilizing both qualitative and quantitative techniques to gather data. The researcher employed Statistical Package for Social Sciences Version 21 to analyze the quantitative data, while content analysis was utilized to analyze the qualitative data. The findings of the study indicate that the ongoing Covid-19 pandemic may pose challenges for individuals seeking to pursue their education. The COVID-19 pandemic has resulted in numerous challenges that have impeded the ability of children to access education, a fundamental constitutional entitlement in Kenya.

Pietro (2020) looked into the likely impact of COVID 19 on education: reflection based on the existing literature and recent international datasets. Numerous nations across the globe have opted to implement temporary closures of educational institutions as a measure to mitigate the transmission of COVID-19. This study examines extant literature and contemporary global statistics (derived from Eurostat, PISA, ICILS, PIRLS, and TALIS) in order to ascertain the potential impact of the COVID-19 pandemic on student learning. This study examines the potential

impact of the virus and associated mitigation measures on academic performance of children, both directly and indirectly. Estimates deemed "conservative" for select EU nations consistently indicate that students, on average, will experience a decline in their knowledge. There exists a perspective among certain individuals that COVID-19 may not uniformly impact all students, may impede the advancement of both cognitive and non-cognitive proficiencies, and may yield significant enduring repercussions in addition to immediate consequences.

Shibuko (2022) similarly conducted a study on the effects of COVID 19 related school closures on pupils' academic performance in public primary schools in Vihiga County, Kenya. The objective of this research was to determine the academic performance of pupils enrolled in public primary schools located in Vihiga. A descriptive survey design was employed in the study, wherein 145 participants, comprising of head teachers, class 8 teachers, class 8 students, and officials from the Sub County Ministry of Education, were administered Likert-scale questionnaires. The study participants were selected through a random sampling method, and the statistical analysis was conducted using SPSS version 23. Based on the findings of the study, students encountered difficulties in achieving optimal learning outcomes in a home-based learning environment. The pandemic has been observed to pose a threat to students' academic progress due to their limited ability to engage in self-directed learning. The research indicates that the COVID-19 pandemic had a significant impact on academic performance, particularly among students attending public primary schools situated in rural or low-income regions. Simultaneously, certain measures were discovered that could mitigate these adverse consequences. Due to the closure of educational institutions, a majority of students have been absent from school for a duration exceeding fifty percent of a standard academic year. Considering the significant amount of instructional time that has been forfeited since the reopening of schools, it is imperative to assess the extent of learning loss and implement remedial measures accordingly. Failure to address this issue may result in educational challenges in the medium and long term.

Fordjour (2020) conducted a study on the impact of COVID-19 on learning: the perspective of the Ghanaian student. The research employed a descriptive survey methodology, wherein a total of 214 participants, primarily consisting of students enrolled in Ghana's secondary and tertiary educational institutions, completed a set of questionnaires containing 11 items measured on a Likert-type scale. The study participants were selected through a simple random sampling technique. The research demonstrated certain challenges encountered by students in the event of school closures due to the pandemic. Covid-19: The efficacy of online learning is hindered by the inability of students to effectively study from home. Parents are faced with challenges in assisting their children in navigating online learning platforms and ensuring effective supervision of their academic progress at home. The pandemic has had a detrimental impact on their academic progress, as a significant proportion of students are unaccustomed to effectively engaging in self-directed learning. A significant proportion of Ghanaian students experience restricted internet accessibility and possess inadequate proficiency in utilizing various technological gadgets. This poses a challenge for their utilization of the novel e-learning platforms.

METHODOLOGY

The study adopted a desktop methodology. Desk research refers to secondary data or that which can be collected without fieldwork. Desk research is basically involved in collecting data from

existing resources hence it is often considered a low cost technique as compared to field research, as the main cost is involved in executive's time, telephone charges and directories. Thus, the study relied on already published studies, reports and statistics. This secondary data was easily accessed through the online journals and library.

FINDINGS

Our study came down to two knowledge gaps, that is the contextual gap and the methodological gaps. A contextual gap presents itself when desired research findings provide a different perspective on the topic of discussion. For instance, Shibuko (2022) similarly conducted a study on the effects of COVID 19 related school closures on pupils' academic performance in public primary schools in Vihiga County, Kenya. The study employed a descriptive survey methodology. The findings of the study indicate that the acquisition of knowledge by students in a home-based learning environment was challenging. The pandemic has been observed to pose a threat to the education of students due to their inadequate self-directed learning abilities. The research findings indicate that the onset of the COVID-19 pandemic has had a noteworthy adverse effect on the scholastic achievements of students, especially those enrolled in public elementary schools situated in rural and economically disadvantaged regions. In contrast, the present investigation centers on the effects of the COVID-19 pandemic on educational systems within developing nations.

Secondly, this study also presented a methodological gap, that is, for instance, Shibuko (2022) adopted the descriptive research design in his study on the effects of COVID 19 related school closures on pupils' academic performance in public primary schools in Vihiga County, Kenya; whereas our current study adopted desk study literature review methodology.

CONCLUSION AND RECOMMENDATIONS

The global COVID-19 viral epidemic poses a threat to both developed and developing countries' academic systems. The future of each country depends on its educated populace. The majority of the world's schools and institutions have been shut down in an effort to halt the spread of the COVID-19 virus. The closure of the school has a detrimental influence on educators, parents, and students. Online learning thus offers a way to keep the educational process going ahead. A lack of ICT infrastructure, computers, radios, and televisions, as well as the reality that many parents lack a formal education, make distance learning challenging in undeveloped countries. Since these issues disproportionately affect the poor and digitally illiterate, whose families typically have kids with lower educational levels and fewer positive attitudes toward learning, they exacerbate inequality. Children who are still in school may have to herd cattle and work in agriculture in many rural areas to make ends meet.

The COVID-19 pandemic has spread globally, forcing all schools to transition to online learning. Governments ought to spend more in network and internet infrastructure, especially in urban and rural areas. The nations must create a strategy to improve their information and communication technology (ICT) infrastructures, expand access to educational technology, implement internet-free educational content, produce digital teaching and learning materials, utilize open educational

resources, implement mobile learning, implement televised instruction, and implement digital teaching and learning materials. When working together to improve the educational system, researchers, curriculum designers, education officers, and educational institutions have closed periods. Educational institutions must reform curricula, create new teaching strategies, and overhaul the educational system in order to adapt to the post-COVID-19 world. After COVID-19, schools and institutions create strategies to catch up on lost work, re-engage students in the classroom when they return, and increase their virtual education offerings. Not to mention, the COVID-19 epidemic has had an impact on conventional classrooms in developing countries. Therefore, it is crucial for underdeveloped countries to increase their capacity for online education.

REFERENCES

- Abumalloh, R. A., Asadi, S., Nilashi, M., Minaei-Bidgoli, B., Nayer, F. K., Samad, S., ... & Ibrahim, O. (2021). The impact of coronavirus pandemic (COVID-19) on education: The role of virtual and remote laboratories in education. *Technology in Society*, 67, 101728.
- Aguilera-Hermida, A. P. (2020). College students' use and acceptance of emergency online learning due to COVID-19. *International journal of educational research open*, 1, 100011.
- Atif, M., & Malik, I. (2020). Why Pakistan is vulnerable to COVID-19 associated morbidity and mortality? A scoping review. *The International journal of health planning and management*, 35(5), 1041-1054.
- Avanesian, G., Mizunoya, S., & Amaro, D. (2021). How many students could continue learning during COVID-19-caused school closures? Introducing a new reachability indicator for measuring equity of remote learning. *International Journal of Educational Development*, 84, 102421.
- Belay, D. G. (2020). COVID-19, Distance Learning and Educational Inequality in Rural Ethiopia. *Pedagogical research*, 5(4).
- Crawford, J., Butler-Henderson, K., Rudolph, J., Malkawi, B., Glowatz, M., Burton, R., ... & Lam, S. (2020). COVID-19: 20 countries' higher education intra-period digital pedagogy responses. *Journal of Applied Learning & Teaching*, 3(1), 1-20.
- Dawadi, S., Giri, R. A., & Simkhada, P. (2020). Impact of COVID-19 on the Education Sector in Nepal: Challenges and Coping Strategies. *Online Submission*.
- Dhawan, S. (2020). Online learning: A panacea in the time of COVID-19 crisis. *Journal of educational technology systems*, 49(1), 5-22.
- Di Pietro, G., Biagi, F., Costa, P., Karpiński, Z., & Mazza, J. (2020). *The likely impact of COVID-19 on education: Reflections based on the existing literature and recent international datasets* (Vol. 30275). Luxembourg: Publications Office of the European Union.
- Ferri, F., Grifoni, P., & Guzzo, T. (2020). Online learning and emergency remote teaching: Opportunities and challenges in emergency situations. *Societies*, 10(4), 86.
- Floris, F., Genovese, A., Marchisio, M., Roman, F., & Sacchet, M. (2020, January). Teacher support in COVID-19 pandemic to develop blended learning disruptive models in Higher Education. In *17th International Conference on Cognition and Exploratory Learning in Digital Age (CELDA2020)* (pp. 173-180).
- Gopinathan, S., Kaur, A. H., Veeraya, S., & Raman, M. (2022). The role of digital collaboration in student engagement towards enhancing student participation during COVID-19. *Sustainability*, 14(11), 6844.
- Jordan, K., David, R., Phillips, T., & Pellini, A. (2021). Education during the COVID-19: crisis Opportunities and constraints of using EdTech in low-income countries. *Revista de Educación a Distancia (RED)*, 21(65).
- Lorente, L. M. L., Arrabal, A. A., & Pulido-Montes, C. (2020). The right to education and ict during covid-19: An international perspective. *Sustainability*, 12(21), 9091.

- Macharia, I. W. (2021). *Factors Influencing Education During the Covid-19 Pandemic, a Case of Primary Schools in Kajiado County* (Doctoral dissertation, University of Nairobi).
- Mahmud, R. (2021). Family socioeconomic determinants and students' demand for private supplementary tutoring in English in urban and rural Bangladesh. *Education and Urban Society*, 53(7), 831-851.
- Okubo, T. (2020). Spread of COVID-19 and telework: Evidence from Japan. *Covid Economics*, 32, 1-25.
- Onyeaka, H., Anumudu, C. K., Al-Sharify, Z. T., Egele-Godswill, E., & Mbaegbu, P. (2021). COVID-19 pandemic: A review of the global lockdown and its far-reaching effects. *Science progress*, 104(2), 00368504211019854.
- Onyema, E. M., Eucheria, N. C., Obafemi, F. A., Sen, S., Atonye, F. G., Sharma, A., & Alsayed, A. O. (2020). Impact of Coronavirus pandemic on education. *Journal of Education and Practice*, 11(13), 108-121.
- Owusu-Fordjour, C., Koomson, C. K., & Hanson, D. (2020). The impact of Covid-19 on learning- the perspective of the Ghanaian student. *European Journal of Education Studies*.
- Pokhrel, S., & Chhetri, R. (2021). A literature review on impact of COVID-19 pandemic on teaching and learning. *Higher education for the future*, 8(1), 133-141.
- Selvaraj, A., Radhin, V., Nithin, K. A., Benson, N., & Mathew, A. J. (2021). Effect of pandemic based online education on teaching and learning system. *International Journal of Educational Development*, 85, 102444.
- Shibuko, K. C. (2022). *Effects of Covid-19-related School Closures on Pupils' Academic Performance in Public Primary Schools in Vihiga Subcounty, Vihiga County, Kenya* (Doctoral dissertation, University of Nairobi).
- Singh, J., Steele, K., & Singh, L. (2021). Combining the best of online and face-to-face learning: Hybrid and blended learning approach for COVID-19, post vaccine, & post-pandemic world. *Journal of Educational Technology Systems*, 50(2), 140-171.
- Tadesse, S., & Muluye, W. (2020). The impact of COVID-19 pandemic on education system in developing countries: a review. *Open Journal of Social Sciences*, 8(10), 159-170.
- Tiruneh, D. T. (2020). COVID-19 school closures may further widen the inequality gaps between the advantaged and the disadvantaged in Ethiopia. *Education in Emergencies*, April.
- Wambua, D. (2021). *Human Rights Dimension of a Pandemic: Evaluation of the Effect of Covid 19 on the Right to Education in Kenya* (Doctoral dissertation, University of Nairobi).
- Wodon, Q. (2020). COVID-19 crisis, impacts on catholic schools, and potential responses| part II: developing countries with focus on sub-Saharan Africa. *Journal of Catholic Education*, 23(1), 51-86.
- Zhao, C., & Hu, Y. (2021). Reflections on study strategy modifications using cognitive load theory and dual processing theory in the first year of medical school. *Medical Science Educator*, 31, 813-818.