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Impact of COVID-19 on the educational system of Sierra Leone

Sorie Saidu Kamara

Research Scholar, KL Business School, Koneru Lakshmaiah Education Foundation, 522502, Vaddeswaram, Guntur, Andhra Pradesh, India

Email: sskamara75@gmail.com

Dr. Sundari Dadhabai

Associate Professor, KL Business School, Koneru Lakshmaiah Education Foundation, 522502, Vaddeswaram, Guntur, Andhra Pradesh, India

Corresponding author email: sundaridadhabai@gmail.com

Abstract---The COVID-19 outbreak has affected over 1.6 billion students in over 200 countries. Educational institutions' closures have impacted 94 percent of the students' world population. The pandemics have caused crises in social, economic, political, educational, and other dimensions. Social distancing and policies of limited movement have completely disrupted the traditional technique of education; Sierra Leone is not an exception. As a result of the changes in the globe due to the pandemic of COVID-19 in 2020, the academic area has undergone significant alterations. Because of COVID-19 epidemic, many researchers have published their findings about classroom instruction. There were suspicions that 2020 academic year and even beyond might be lost. Due to this unique set of circumstances, the academic state of affairs has nearly completely changed. As a result, the epidemic presented an opportunity to prepare the path for online training, maintaining proper classroom spacing, and maintaining a teacher-to-student ratio in classrooms. The quality of such programmes, as well as what can be learned from them, is worthy of further consideration. In such a dynamic state of affairs, the current study takes the opportunity to technically examine several challenges and elements affecting learning in African countries, focusing on students, academics, and teacher educators. Sierra Leone's educational establishment followed the COVID-19 pandemic restrictions for education in terms of maintaining proper spacing and teacher - student ratio in the classroom. Digital learning is completely impossible in Sierra Leone, because of lack of energy supply, internet facilities, and access to computer.

Keywords---COVID-19 pandemic, educational institution, education, classroom spacing.

Introduction

COVID-19 has affected almost every nation, region, and the globe in general. Countries all across the world have issued cautionary statements to their populations. Public health precautions like hand washing, wearing of face masks, physical separation, and the avoidance of big crowds and assemblies were all implemented as health precautions. According to Sintema, the infection has been contained by using lockdown and stay-at-home tactics (2020). The epidemic has a detrimental impact on educational activities and practices, which has been extremely difficult for educators to deal with. The worldwide closure of schools, universities, and technical institutions has thrown a generation of students into turmoil. Its ramifications continue to raise considerable concerns. In the middle of the COVID-19 epidemic, UNICEF is collaborating with Sierra Leone's Ministry of Education to maintain learning continuity. More than 2.6 million students in Sierra Leone have been affected by nationwide school closures. Teachers and psychologists are increasingly concerned about the impact of social isolation on children who are confined at home. The loss of contact with peers and teachers constitutes a physical threat and mental unbalance to most vulnerable children, say experts. For teachers, the challenge has not only been pedagogical but also personal and psychological.

Initially, people assumed it was an ancient virus from the influenza-type coronavirus family, which is responsible for colds and coughs. A virus that surfaced in 2019 was originally called coronavirus disease 2019, abbreviated as the COVID-19 Pandemic. On February 11, 2020, the World Health Organization updated the name to novel corona virus (2019-nCov). In a very short period of time, this sickness had engulfed the entire planet, including developed, developing, and undeveloped countries. For this Covid-19 Pandemic, only a few countries may have remained exceptions. This virus instilled fear in the minds of those who came into contact with it. Bhutan's entire country was put on lockdown in March and August 2020 due to the threat of a possible terrorist attack.

Situation of COVID-19 Pandemic in Sierra Leone context

Neither directly nor indirectly, could the spread of the COVID-19 pandemic be avoided by any country on the planet. On March 31, 2020, Sierra Leone's Department of Health and Hygiene confirmed the country's first incidence of COVID-19. Samples analysed at the Military 34 Hospital and two additional accredited laboratories in Freetown on March 30, 2020, came up positive. On March 12, 2020, the patient a 37 years old Sierra Leonean man travelled to France. He returned on March 16, 2020, upon arrival he was immediately put in a 14-day monitored quarantine, but by the end of it, he was experiencing flu-like symptoms. COVID-19 was found to be the source of his infection. We have made the transition from preparedness to response." "We must now concentrate on locating the people with whom the patient may have come into contact in order to isolate them and provide them with medical care," according Evans Liyosi, WHO

Representative in Sierra Leone. Since then, the number of positive cases has risen in Sierra Leone's underdeveloped health system. More than 7,677 cases have tested positive for coronavirus in Sierra Leone as of March 30th, 2020 up to April 14th, 2022, with 125 deaths reported to WHO; the lowest rates in the world when compared to overall population of 7.5 million people.

WHO has been providing technical and material assistance in Sierra Leone since the COVID-19 epidemic was declared. The organisation has given personal protection equipment as well as other screening equipment for handling suspected cases both at airports and other entry points into the country. In Sierra Leone, there has been a strong focus on public health, with extra initiatives to enhance early case detection and confirmation, frontline health worker protection, and traveller screening

Despite their lack of understanding of COVID-19, the people took the risk of preventing the disease's spread through everyday means. Washing hands with soap, cough into a handkerchief or a bent elbow, and preventing touching your eyes, nose, and mouth are just a few examples. Beginning on May 3, 2020, the President of Sierra Leone declared a lockdown of schools, including higher educational institutions, as well as the restriction of public exercise and big gatherings, and urged citizens to seek shelter at home for 14 days. The pandemic of COVID-19 in Sierra Leone resulted to the closure of learning institutions for 14 days, to stop the spread of the virus. However, it was insufficient to completely stop the virus from spreading because many people who had been exposed to the virus couldn't lock themselves up for that long.

Sierra Leone's Educational System and the COVID-19 Pandemic

The spreading of the COVID-19 epidemic has a detrimental influence on Sierra Leone's educational sector. More than 2.6 million learners, or 91 percent of all students in Sierra Leone, were affected when governments formally closed educational institutions (according to the UNESCO Official Website: <https://en.unesco.org/covid19/educational-reaction>). Since March 2020, the globe, including Sierra Leone, has seen a tremendous shift in teaching approaches in schools and higher education institutions. According to Reich et al., the virus surged across the country and forced school closures in the first week of March 2020 in the United States, regardless of the fact that the very first incidence was diagnosed in the metropolitan city of Seattle in the middle of that month (2020). A few weeks after the school closed, most schools began offering online learning to replace the traditional classroom.

Apart from Liberia, Gambia, and Guinea Bisao, Sierra Leone has the smallest population in Sub-Saharan Africa, with a population of more than 7.5 million by 2020. The number of students enrolled in school is also among the lowest. After the government learned about COVID-19's terrible effects in Asian and European countries, a large number of students have been removed from school since March 2020. School closures are now a global occurrence, but unlike in other nations. Students in Sierra Leone received no online or television instruction, instead relying on radio, which proved beneficial for students in cities and large towns. Because there is a lack of electricity supply, internet access and alternate

learning methods are never used. Head teachers, principals, instructors, supervisors, support personnel, and entire communities in both institutes opted to use the recommended formulas for the size of an optimal classroom area. Students with special needs (SEN) who are taught alongside students who do not have such needs will be included in this measurement. The number of students that a classroom can comfortably accept for convenient teaching is determined by the size of the room. This formula was adapted from a report based on a Welsh Government Circular by the author (Number 021/2011 in October 2011). Sondai

$$N = \frac{A}{1.86 \text{ m}^2}$$

et al. (2017). Net Capacity formula of Schools =

Where N is the number of pupils in a perfect teaching environment,
A = the teaching classroom's floor area or the chosen classroom's floor area.
In an ideal classroom, the normal classroom floor space allowance per student is 1.86m².

Conversion:

$$ft^2 \text{ to } m^2$$

$$m^2 = \frac{ft^2}{10.764}$$

$$m^2 \text{ to } ft^2$$

$$ft^2 = m^2 \times 10.764$$

Example 1. Table showing the calculations of the ideal number of students in a classroom using the formula before COVID-19

School	Number of students in a school	Total number of classrooms	Total Classroom area (m ²)	Number of students allocated in a classroom	Using the formula, the ideal number of pupils in a classroom is	Number of classrooms that can ideal accommodate the students
					$N = \frac{A}{1.86 \text{ m}^2}$	
A	480	10	52	48	28	17
B	663	10	27	66	14	47

The net capacity school formula was used to calculate the number of pupils who should be in an ideal teaching classroom before COVID-19. According to the calculations, the actual student population in each classroom of sampled junior secondary schools A and B is 28, and 14 respectively. According to the formula, the numbers of classes needed to accommodate the students in each school are 17 and 47 respectively, as compare to 10 classrooms in each school. This highlighted how overcrowded the classes are, and how such a large number can be tolerated considering COVID-19 pandemic's social distancing restrictions. A school's student-to-teacher ratio is a metric that many parents are interested in, and it is frequently used as a recruitment tactic, Romala Vijaya Srinivas (2014).

Example 2: The table below depicts the calculations of the ideal number of students in a classroom using COVID-19 social distance regulations

school	Number of students in a school	Total number of classrooms	Total Classroom area (m ²)	Number of students allocated in a classroom	Using the formula, the ideal number of pupils in a classroom is $N = \frac{A}{1.86 \text{ m}^2}$	COVID-19 limits dictate the ideal number of pupils in a classroom. $N = \frac{A}{3.72 \text{ m}^2}$	Number of classrooms according to COVID-19 restrictions
A	480	10	52	48	28	14	34
B	663	10	27	66	14	7	95

Two students' spaces before COVID-19 should be used for one student space during COVID-19. Therefore, the normal classroom floor space allowance per student (1.86m²) in the net capacity school formula is to be multiplied by two (2*1.86m² =3.72m²) to calculate the optimal number of students that should be in a classroom during the COVID-19 pandemic. According to example 2, the number of students who should be in the classrooms during COVID-19 is 14 and 7, for schools A and B, respectively. Therefore, 34 and 95 classrooms are required for the accommodation of students in the respective schools, rather than 10 classrooms each.

In order to conduct educational programmes while adhering to the government's COVID-19 restrictions, these measures were accepted by school authorities across the whole Country. Using the social distancing spacing criterion, pupils were divided into groups based on the maximum number of students a classroom can hold. This impacted the educational system negatively as it takes a lot of time and money to complete a topic for a level of students.

Impacts of COVID-19 Pandemic on students

Sierra Leone's ministry of education announced the closure of schools due to the global epidemic. National exams have been postponed for an undisclosed period of time. Students are tense because of the lack of clarity on subjects such as how to prepare for the national examination and when it will be held. Students from university courses who are expected to earn a lot of money can make up for their weak starting points, but graduates from recession-hit programmes suffer permanent earnings losses. Evidence implies that workers are forced to take lower-paying jobs at the outset of their careers due to poor labour market conditions. University graduates have been impacted significantly by the COVID-19 pandemic. The disruptions to normal learning concern not only the students, but also their parents. On April 3, 2020, the Ministry of Education advised elementary school children to listen to instructional programmes on the radio, declaring, "If you have access, you can listen to educational programmes via radio." Many students lack access to basic amenities such as power, radio, and the internet, and their parents lack the understanding as to how to offer time for their children at home, to participate in educational programs. This demonstrates how and why the COVID-19 has a huge impact on Sierra Leone's educational

system, bringing it dangerously close to collapse. To deal with the global epidemic, schools all across the globe have been closed. Governments, emergency personnel, and health experts do everything they can to stop the spread of the disease. During these trying times, schools endeavor to deliver a high-quality education to all pupils. Almost all universities and secondary schools have been prepared to serve as isolation centers for those afflicted with the pandemic virus. Colleges are playing an important role in assisting a shaky healthcare system. Many pupils have had psychological and emotional difficulties at home or in their surroundings. According to Petrie (2020), the best online homeschooling strategies have yet to be developed.

Impacts of COVID-19 Pandemic on Teachers

Almost every day of the pandemic, the situation changed. Every day, a new set of standards, norms, regulations, operational processes, announcements, orders, and so on is introduced into the educational system, producing confusion. This ever-changing setting has a significant impact on teachers and their students' development. They were always dealing with changes, and the majority of their time and effort was spent attempting to stay up with the ever-changing educational scene. As a result, rather than learning, teachers had to deal with a constantly changing environment, which had a negative impact on their students' learning. Significant elements affecting teachers' learning will take a favorable turn when these factors have a beneficial impact on teachers' learning. Computer knowledge was required for all teachers in the radio teaching programme. They should be capable of managing computers, digital gadgets, and auxiliary devices as well as operating them. They were able to work on a variety of software and apps that were necessary for radio education. They should have a fundamental grasp of computers and the internet, as well as what they should and should not do when using any digital device to access the internet. While going onto numerous websites for teaching and learning purposes, they would have a good understanding of cyber-security issues. They will be informed of how to use various browsers and the challenges that come with them while surfing the web. Teachers would be captivated by the prospect of attending or participating in radio learning programmes. Teachers were picked to attend programmes related to their areas of specialty. It is an area of interest that would greatly assist teachers in learning something new in the field and quickly grasping the understanding gained from such programmes. Subject specialization is another factor that influences a teacher's learning. Teachers will select a radio learning curriculum that is relevant to their areas of specialization. Better and more learning in specialist areas will aid teachers' professional development and may help them advance or get promoted in their career.

Impacts of COVID-19 Pandemic on Parents

The COVID-19 epidemic had far-reaching consequences for families. Many parents encountered workplace changes, such as job loss and lower salaries, and working from home. Families also faced increasing childcare obligations due to the closure of schools and closures of childcare centers across the country Cox & Paley, (1997). The government's lockdown of schools does not imply that pupils are being sent home to play, but to continue their education at home. Parents

were more inclined to help their children with schooling as well as provide permanent education via online learning, Fisher et al. (2020). However, you may be surprised to learn that some parents simply leave their children to play. According to Bjorklund and Salvanes (2011), parents are at the centre of education and have decided to meet all of their children's educational demands. The pandemic of COVID-19 may be connected to a higher risk of negative outcomes for families and students. Scholars and practitioners have raised concern about the rise in domestic violence and child abuse, according to Brown et al. (2020). In the not-too-distant future, many families may find themselves homeless, Rogers & Power (2020).

Pandemic 2020 and Lockdown

When the virus's propagation could not be stopped, global stakeholders defined and designated it as March 11, 2020 pandemic WHO (2020). All of this occurred in 2020, hence the epidemic is known as Pandemic 2020. As a result of the virus's spread throughout countries, top administrators were forced to consider what preventative steps could be taken, as there was no reliable treatment or medical prescription for this disease. The lockdown was one of these preventative steps. As a result, in 2020, many countries began the lockdown in stages or as a single-part lockdown. The closure sparked widespread alarm and worry among ordinary people. It caused not only psychological but also social anxiety among the general public. It had a significant impact on the academic fraternity's thinking. Teachers, students, parents, and educational stakeholders were all concerned about the outcome of education in future as a result of the lockdown. And as the lockdown was prolonged again and again, and the lockdown period became longer and longer, this question became more important. As a result, everyone in the educational community attempted to solve the problem in their own capacity, both individually and institutionally.

Environmental Factor and Psychological of radio teaching

Despite the fact that the students attend the radio programmes and sessions, their attentiveness is crucial to their learning. Because students are taught at home, the home environment, house space, home events, family members, home routine, and other factors influence their focus during online interactions. These factors have a big impact on their willingness to take online courses as well as their concentration. And, if students do not attend online sessions with sufficient focus, their learning will undoubtedly suffer. During their studies, students must pay attention. While learning from home, it is difficult to build up and maintain a high level of concentration. Students were unable to concentrate for longer periods of time for a variety of reasons, including a lack of consistency in their concentration. Even if students had all they needed to learn, lack of concentration was one of the major variables affecting their learning. Not every student was eager to participate in the radio learning programme with complete honesty and sincerity. Some kids were there because they had been told by the administration that they needed to be there. Because some people were attending these programmes for one reason or another, not everyone was participating with the same sincerity and honesty, and their learning was delayed as a result of their attitude and unwillingness to listen to radio programmes for learning.

The Reopening of Educational Institution and the Future of Education in Sierra Leone

After the announcement for the reopening of educational institutions by the president, the education authorities in the ministry of education prepared a schedule as to how the process should take place, because educational institutions should not be fully reopened immediately. The reopening took place in stages, the physical challenge as well as students who have to take end-of-program evaluation are prioritized. Educators who are over 55 years with underlying health conditions were asked to stay home. Heads of institutions organized catch-up classes to provide incentives such as stationery, pens, text books for core subjects, mathematical sets, rules, etc. at very low prices in order to motivate the students to return to their respective institutions immediately and help the country avoid a sudden reversal of the pandemic. All regions established coordinating bodies to facilitate the reopening process, although most of the regions did not have enough funding for proper reopening preparedness, while some had inadequate plans on hand. However, the main focus is on making educational institutions, particularly those that were used as inoculating sites, appropriate for learning during the COVID-19 epidemic. Because some infrastructure has been neglected or abandoned for many years, it is now time to renovate them. It will be an opportunity to create health and hygiene programmes in institutions that will act as a link for a referral system, based on what other countries have done. It is also critical to continue to make progress in improving radio remote learning alternatives so that Sierra Leone's education system can remain adaptable, robust, and responsive in the future.

Maintaining Quality Education in Sierra Leone regardless of COVID 19, Pandemic

This same COVID-19 epidemic has impacted negatively on school systems around the world. To keep the learning crisis from becoming a disaster, everyone must act quickly. About 1.6 billion students in more than 200 countries across the continent are affected by school closures and disruptions. According to the United Nations Secretary General's Special Envoy for Education, education is a fundamental right that has a profound impact on all other human rights and is a primary driver of development across all 17 Sustainable Development Goals as the foundations of equal, inclusive, and peaceful societies. Peace, tranquility, prosperity, and productive civilizations cannot be preserved if education systems fail. Governments should adopt the following policy solutions to prevent the possible severe implications of the COVID-19 pandemic:

- ❖ Build an education system for equitable, resilient and sustainable development.
- ❖ The transmission of COVID-19 virus should be suppressed and planned thoroughly for the reopening of school.
- ❖ Accelerate changes in teaching and learning process in education.
- ❖ Teachers should be trained how to use wide range of distance learning tools
- ❖ There should be availability of funds to finance education.

Conclusions

As the COVID-19 pandemic catastrophe worsens, everyone in the world becomes increasingly perplexed and mentally distressed. Almost everyone on the planet was touched by the COVID-19 pandemic, either directly or indirectly. When the pandemic began in March 2020, the lockdown became one of the most important preventive measures to protect people from the disease. Regardless of your status, the lockdown affected practically everyone to a greater extent. In the sphere of learning and teaching, the lack of movement outside of the home prompted the demand for digital learning. Students' learning was affected to a large extent by factors such as lack of electricity, attention, health concerns, and family issues, despite the fact that radio programmes served as a medium of learning for students and teacher educators. Teacher educators were influenced by specific factors such as the scale for advancement, employment sustainability, subject specialization, sincerity, and honesty. Many field of studies support these elements and their effects on students and teachers as educators. As a result, although interactive online distance learning has grown in popularity as an educational tool, COVID-19 Pandemic has a profound influence on educational outcomes and its quality in this shifting educational landscape of digital learning. The following are the general impact of COVID-19 on education:

- 1) More courses are available online for students to learn.
- 2) Students will be open-up to more employment after graduation.
- 3) The required equipment for teaching and training of students will be available in institutions.
- 4) Quality education will be available, because students are going to be taught and train online.
- 5) Available equipment are going to be utilized by both students and faculty
- 6) What-sap, e-learning and e-examinations system are available and properly utilized.
- 7) Blended learning took place, changing the pedagogy from classroom to online learning.
- 8) Students will have two major things to think of:
 - a) Their health status
 - b) Their achievement academically
- 9) The administration will have confidence and build confidence to the students they are admitting.
- 10) Since students are divided according to COVID-19 seating restriction, only one section can be taught per day.
- 11) There will be a strong connectivity between parents and administration.
- 12) The slides prepared by the lecturers must be well communicated.

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