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Left Behind Under Covid-19: The Limits and Impact of Online Education at the Basic School Level in Ghana : 50-68

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ABSTRACT

This study examines the impact of Covid-19 on access to online education or Distance Education at the basic school level. Specifically, it sought to analyse the differential access to online education due to digital divide resulting from the mechanism of income inequalities. The case study strategy within the qualitative approach was deployed for the study. Among other things, the study revealed that differences in income affected children's access to online education during the school closures. While children from lower income groups had access to online education, access doubled for children from high income groups. The study also found that children accessed online lessons with different technological devices such as smart phones, computers, laptops and tablets. It was further found that there are variations in the multimedia used by schools in the delivery of lessons. The multimedia commonly used by schools include WhatsApp, Zoom and Google classroom, all of which were found to have different impact on the quality of online studies.

Keywords: Ghana, Covid-19, Basic Education, Online Education, Inequality

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1.0. Introduction

The adoption and use of Information and Communications Technology (ICT) has grown rapidly in the last few decades. This has led some scholars to project that ICTs are not here to stay but to grow (Sun & Chen, 2016). These projections gained currency with the emergence of the Corona Virus Disease in late 2019 (Covid-19). Almost universally, governments around the world responded with announcement of closures of schools, colleges and universities as part of measures to curb the spread of the virus (Ngware, 2020; eLearning Africa, 2020). In Ghana, specific directives were issued by the president in his second address to the nation, that all universities, secondary and basic schools be closed by 16th March, 2020 till further notice (Danquah, 2020). These school closures caught both school administrators and parents off balance. The pandemic arrived without any warning, rendering the brick-and-mortar classroom obsolete with little planned to replace it (eLearning Africa, 2020).

To make up for the school closures, the Ministry of Education and the Ministry of Communication were tasked to roll out distance learning programmes (Danquah, 2020). However, without any existing online education infrastructure, schools were left to rollout online education on their own terms making ICT, a facile panacea to navigating the challenges posed by the pandemic. ICT has resulted in what Roblyer (2003) referred to as the death of distance where there is no more spatial barrier to education as a result of distance. Furthermore, ICTs have enabled access to remote learning resources. Teachers and learners no longer have to rely solely on printed books and other materials in physical media housed in libraries for their educational needs. With the Internet, a wealth of learning materials in almost every subject and in a variety of media can now be accessed from anywhere at any time (Tinio, 2002).

Despite the monumental impact of ICT on education, a good number of people in the developing world including Ghana have yet to experience the much touted power of ICTs in education. Distance education in Ghana has heavily relied on the print media, mainly because it remains the cheapest, most accessible and therefore most dominant delivery mechanism in both developed and developing countries (Tinio, 2002). The limited use of ICT in Ghana's education sector is not due to the lack of access to ICTs but largely due to sluggish implementation and adoption of the ICT for Development (ICT4D) policy by state institutions (Kubuga et al., 2021). It is worth noting that, although all ministries, departments and agencies are supposed to develop their own ICT master plans to feed into the national policy, only the Ministry of Education and Ministry of Health have publicly available ICT4D policies. Even so, implementation especially in the education has not been sluggish. It must be stressed, however, that the use of ICTs in Ghana have grown substantially. Nineteen million (67 percent) Ghanaians were mobile

phone? subscribers in the year 2018 which was above the sub-Saharan African average of 44 percent (Speakup Barometer, 2018). By January 2020, the number of subscribers increased to 39.97 million people with over 14 million internet users and 6 million social media users (Kemp, 2020). Notwithstanding the gains made in both mobile connectivity and internet accessibility, there is still a vast number of Ghanaians without access to both smart phones and internet which are prerequisites for successful and sustainable online or distance education (Speakup Barometer, 2018).

It is also important to point out that the use of ICTs and Learning Management Systems are not new in Ghanaian institutions, however, they have largely been used for administrative purposes in schools and universities. In the last few months, ICTs have been used to support distance learning in Ghana out of necessity and not for its transformative powers. Anecdotal evidence suggests that universities in Ghana have largely coped well with the pandemic by swiftly switching to online teaching and learning albeit with difficulty. The same cannot be said for basic schools which, includes two years of kindergarten, six years of primary school and three years junior high school. All over the world, basic school children were the most affected by the school closures. According to eLearning Africa (2020) primary school children are not familiar with independent study or studies outside the classroom, they need parental guidance which may not be feasible as some parents have limited education or maybe too busy to support their children to learn. Furthermore, primary or basic school children are the least likely to have access to internet-enabled devices and even when they do, the capacity to source educational materials is lacking (eLearning Africa, 2020). These challenges underscore the gloomy situation in many basic schools in Ghana during this pandemic. Indeed, public basic schools are likely to suffer the most as they are unlikely to have access to technology. According to Ayebi-Arthur et al. (2009) primary level provision of ICT is mostly provided in private schools.

This study, therefore, set out to answer the following question: how has Covid-19 impacted access to online education or DE at the basic school level? Specifically, the study seeks to examine the differential access to online education due to digital divide resulting from the mechanism of income inequalities. This paper makes twofold contribution to literature; firstly, it makes general contribution to the burgeoning empirical studies on Covid-19. Secondly it extends the literature on access to education beyond traditional in-class access to encompass access to online/distance education with an array of nuances. For instance, the study analyses how interactions between access to ICT and the level of incomes combine to enhance online education or otherwise. The rest of the paper is organised as follows: section two discusses the state of online/distance education at the basic school level in Ghana and section three reviews some literature on theoretical

linkages between digital divide and income. Section four and section five presents the methodology and the analysis of data respectively and the conclusion is presented in section six.

2.0. The State of Online/Distance Education at the Basic Level in Ghana

ICT is a powerful tool that can be used to enhance the pedagogical development of education. In order to harvest the potential benefits inherent in ICT, conscious efforts must be made in adopting policies that incorporate the development of ICTs as well as the capacities of the human resource base. ICTs are especially identified as significant tools for expanding access to education (Internet Society, 2017; Tinio, 2002) largely via Distance Education (DE). DE has been deployed in Ghana for nearly three decades (Edwin & Nana-Yaw, 2016) but for all these years, it failed to take advantage of the technological advancement in education. DE in Ghana continued to rely on learning centers by establishing campuses in almost every region in the country.

Hendrynych and Prinsloo (2010) categorised the development of DE into five generations, the world is presently in the 5th generation of DE. The key features of this stage are video conferencing, audio-graphics, the internet and World Wide Web, sharing of resources, asynchronous and synchronous communication. It also entails the integration of media and technology for multiple platforms (freedom to select) – student and teacher options (Hendrynych & Prinsloo, 2010). The first generation distance education (from 1451–1916) mainly used the printing press and books – correspondence – mass media and technologies. Interaction was mostly content based and dominated by limitations of print technology – self-pacing – mass delivery of DE and the mode of delivery by mail (Hendrynych & Prinsloo, 2010).

A look at the categorization shows Ghana has been stuck in the first generation for nearly three decades of implementing DE. Although some universities have adopted some online features on their websites, they were mainly for administrative purposes hither to Covid-19. Thus, DE before covid-19 was limited to only universities and also did not effectively make use of ICTs or online platforms. Again, the concept of DE and online learning are concepts that are completely alien to secondary and basic schools in Ghana. Notwithstanding these lapses, the government of Ghana has made some efforts at revamping ICTs at the various sectors of the state including the education sector. The government recognized the relevance of developing a comprehensive integrated ICT-led socio-economic development policy in order to make the economy information and knowledge based one. This vision laid the foundation for development of the Ghana ICT for Accelerated Development (ICT4AD) policy (Republic of Ghana,

2003).

Ghana's ICT4AD has fourteen pillars, one of which is the deployment and exploitation of ICTs in education. The policy has beautifully worded strategies on promoting e-learning in all schools and universities but observation on the grounds shows that the implementation of the education sector ICT4AD has been sluggish. In an attempt to promote the use of ICT in teaching and learning in basic schools, the Ministry of Education introduced the "the one laptop, one student" policy. 1,000 laptops were distributed to some 30 schools across the country. Some 2,500 junior high schools also received 60,000 laptops (Education Sector Report, 2010; 2012 cited in Adarkwah, 2020). Not many school children were covered by "the one laptop, one student" policy, and not much success has been achieved by the ICT4AD policy. It is therefore not surprising that many schools in the country approached the DE or online education with the rule of thumb. Amidst the pandemic, the National Inspectorate Board, Ghana (2020) came out with guidelines to guide schools to design and implement electronic learning to ensure learning continues outside the traditional classroom.

In Africa, many countries have resorted to the use of radios and television to reach out to school children in their homes (Kuwonu, 2020). These programmes were sometimes provided in partnership with the private sector, albeit not well organised (eLearning Africa, 2020). In addition, many private television and radio stations filled the vacuum by providing radio and television lessons to school children in the early days of the pandemic. The government of Ghana in partnership with the US government through the US Agency for International Development (USAID) launched the Ghana learning radio reading programme in June 2020 to extend educational lessons to school children for the rest of the time that they will be home (USA Embassy in Ghana, 2020). Under the programme, distance education in English and 11 official Ghanaian languages for Kindergarten two through fourth grade will be broadcasted. The Ghana Education Service and the Ghana Broadcasting Corporation commenced the broadcast of interactive lessons on June 15 2020 (US Embassy in Ghana, 2020). It is important to mention that the effectiveness of the lessons will depend on whether households have televisions or radios as well as the availability of parents to guide children during these lessons.

2.1. Income, Digital Divide and Digital Inequality: A theoretical Link

ICT is believed to be a means of expanding access to education to a vast population of people (Tinio, 2002) who were originally left out due to geography, status or physical handicap (Carr-Chellman, 2005). However, the irony is that the deployment of ICT has denied many people access to education especially in

Sub Saharan Africa due to limited access. There is growing literature on what has come to be known as digital divide which is often discussed in the international context, usually, comparing developed countries that are more equipped to take advantage of the benefits of the internet and developing countries (Internet World Stats, n.d.). However, analysis of digital divide has transcended the international and now extensively analysed at the national level. It is explained as inequalities in access and use of internet, with lower levels of connectivity among women, racial and ethnic minorities, people with lower incomes, rural residents and less educated people (Hargittai, 2003). It is also defined as the differing amount of information between those who have access to ICTs and the internet and those who do not have access (Internet World Stats, n.d.).

The literature makes a distinction between digital divide and digital inequality. The use of the term digital divide has over the years emphasised a binary definition which focuses on absolute inequalities between the included and excluded. Hargittai (2003) stressed the need to look at how internet is accessed and used. DiMaggio and Hargittai (2001) specifically suggested the replacement of digital divide with digital inequality as it is a better reflection of the various dimensions of digital divide. They defined digital inequality to mean the situation where the differential spread in the use of internet leads to increasing inequalities, in ways that benefit those already in advantageous positions while denying access to better resources to the less privileged. Indeed, Robert Merton (1975) cited in Hargittai (2003) referred to this as the “Mathew Effect” which states that “unto everyone who hath shall be given” where initial advantage favours’ those who already have access over time. Another criticism of the binary view of the digital divide is that it fails to account for nuances in technological inequalities and the fact that these inequalities continue to shift as new technologies emerge (Van Dijk, 2006). Consequently, measurements of digital inequality now rely on multidimensionality which draws attention to five components of digital inequality (DiMaggio & Hargittai, 2001). See table 1 below for details of the five approaches.

Table 1: The Five Approaches to Multidimensional Digital Inequality

Approaches	Key Features	Key Examples
First Approach	Variations in equipment or technology people use to access the internet	This aspect of digital inequality includes the extent to which households have computers, software, and connections that allow them to effectively engage with online content.

Second Approach	Emphasise variations in the autonomy of Internet use	Autonomy includes whether users access the Internet from work or home, whether their use is monitored, their frequency of use, whether they must compete with others for time and access, and the extent to which their use is circumscribed by filters or other constraints.
Third Approach	Variations in the level of skill that people bring to their Internet use.	Skill encompasses users' digital literacy, "their capacity to respond pragmatically and intuitively to online challenges and opportunities," and their ability to master new technologies and mobilize information resources to meet everyday goals and concerns.
Fourth Approach	Variation in the level of social support on which Internet users can draw constitutes a fourth dimension of digital inequality.	Variation in the level of social support on which Internet users can draw constitutes a fourth dimension of digital inequality,
Fifth Approach	Variations in the purposes for which people use technology.	This dimension involves the ways in which people use the Internet to increase their economic productivity and their political and social capital.

Source: *Policy Development and Research (2016)*

There are also multilevel digital inequalities which pays attention to the influence of social dynamics on internet access at different levels of society. In other words, the multilevel highlights the impact of local environments on people's desire to adopt the internet and relevant technologies (Katz & Gonzalez, 2015). All these dimensions of digital inequalities have impact on the varying degrees of access to online education or DE. There are many studies that affirm the assertion that access to technology vary across different populations, households and spaces (Lambani et al., 2019; Gyamerah, 2020).

Furthermore, there is extensive literature on the connections between digital inequality and income (Porumbescu, 2020; Policy Development and Research, 2016; Zhang, 2013). Porumbescu (2020) argues that digital split falls

along prevailing lines of socioeconomic inequality. People who are poor and live in less affluent neighbourhoods pay more for less reliable service. He further argues that though smartphones are now prevalent across all socioeconomic groups, they continue to be poor substitutes for broadband internet access for tasks such as working from home or for the purposes of online studies. In Ghana for example, 39.97 million people are connected to mobile phones and 14.76 million people are internet users (Kemp, 2020). Despite the high mobile and internet connectivity in Ghana, many people are still without access. This underscores the weaknesses of the Ghanaian educational system with regard to the integration of ICT into educational delivery. A major challenge of the education sector in Ghana is inequality in educational resources which include the use of computers and other ICT gadgets in schools (Buabeng-Andoh, 2012). The deployment of ICTs in secondary schools are tilted towards category 'A' schools that are situated in urban areas (Antwi et al., 2018). At the primary level, the provision of ICT is mostly limited to private schools (Ayebi-Arthur, Aidoo & Wilson, 2009).

According to eLearning Africa (2020) the guidelines provided by governments for deploying technologies for sustaining education under covid-19 varies but generally focused on TV and radio. These guidelines also mentioned phones, tablets and laptops but it was recognized that these devices may be accessible to a minority. The report concluded that poor and spatially dispersed students are most at risk of missing out on education if there is no in-class school. Also, it is reported that though, digital divide is not limited to the developing world, it is much pronounced in developing countries as access to internet is available only to those who have the financial muscle (Zhang, 2013).

3.0. Methodology

The case study strategy within the qualitative approach was deployed in this study. The study is specifically an instrumental case study which is intended to present an in-depth understanding of the impact of covid-19 on access to distance education or online studies at the basic school level. Both convenient and purposive sampling techniques were used to select respondents for the study. The maximum variation or heterogeneous purposive sampling was employed in selecting the sample for the study. The convenient sample was targeted at those participants who responded to the questionnaires via email. These respondents were people the researcher knew in person and could easily persuade to download and respond to a soft copy version of the questionnaire. Maximum variation purposive sampling was adopted for the purposes of documenting diverse variations that emerged in adjusting to different situations and to also identify the significant common patterns that cut across variations (Palinkas et al., 2015). Deploying the heterogeneous purposive sampling ensured parents who

had children in private and public schools were selected. The technique also allowed for the selection of parents from different income groups. Allowing these variations ensured a well-balanced sample since theoretically, access to online education at the basic school level is influenced by the income level of parents which largely informs whether a parent sends a child to private or public school.

Data for the study was collected from both primary and secondary sources. The secondary sources included journal articles, online resources, opinion pieces and institutional reports. Open ended questionnaires and observation were the main sources of primary data. The questionnaires were administered directly and via email to respondents. For the questionnaires that were administered directly, the researcher was supported by research assistants in administering the questionnaires. Respondents who were not literate were assisted in responding to the questionnaire. The questionnaires that were administered via email were sent to only literate respondents. They were required to download the questionnaires, respond to the questions and send them back via email. Since the questionnaire was an open-ended one and was also in word document, respondents could easily respond to the questions in a soft copy format and send them back via email. The data was collected from 55 respondents across six regions in Ghana including the Central, Greater Accra, Northern, Upper East, Upper West, and Savannah regions. The regions were also conveniently and purposively selected to cover the northern and southern parts of the country. The study adopted a holistic approach to the analysis of data where entire case is analysed. The analyses also focused on some key issues (themes) not for the purposes generalization but for understanding the complexity of the case (Creswell, 2018). The themes were derived from the research questions the study sought to answer.

4.0 Analysis and Discussion of findings

4.1. Demographic Characteristics of Respondents

A total of 55 respondents participated in the study. Of the 55 respondents, there were 25 females and 30 males. The data was collected across six regions in Ghana – four of informants were from the Greater Accra Region, 19 from the Central Region, the Northern Region had three respondents, eight respondents were from Upper East Region, six and 15 respondents were from the Upper West Region and Savannah Region respectively. The response rate in the Greater Accra region and the Northern region were low because questionnaires were administered purely via email. Many of the respondents had some form of education, 32 respondents had tertiary education and 13 possessed secondary education. Six had basic education and four respondents did have any form of education.

4.2. School Categorisation and the Provision of Online Education

The analysis sought to examine the infrastructure in the various schools in order to categorise schools into category 'A' which is conceptualized as resource endowed schools or category 'B' which is conceptualized as less resource endowed schools. The categorization stemmed from an assumption that category 'A' schools are often patronized by those in the high income group and that such schools are more likely to rollout online studies than Category 'B' schools. Infrastructure such as library, computer laboratory, and playground were used as standards for categorizing schools into 'A' or 'B'. In addition to these, class size in schools was also considered in the categorization process. A standard class size in Ghana's basic schools is 35 pupils. Schools that possess all of the above features are put under category 'A' and those that do not have all the features are put under category 'B'. The analysis of the data showed that 21 schools possessed all the requisite facilities and were accordingly classified under category 'A' and 34 schools did not possess all the facilities and were therefore placed under category 'B' schools. 12 of the 21 category 'A' schools representing 57.14 percent run online studies while only eight of the 34 category 'B' schools representing 23.52 percent run online studies. The findings further show that more private schools, precisely 19 which is approximately 90.47 percent fall under category 'A' while only two public schools representing about 9.52 percent fall under category 'B' schools. This finding is very significant for two main reasons – the first being that private schools are disproportionately represented under category 'A' schools and the second reason is that these category 'A' schools tend to rollout online studies whereas category 'B' schools do not. The implication of this is that children who attend private schools were more likely to have access to online education during the school closures than children in public schools. This finding resonates with the views of a respondent below as well as other studies that have reported that online studies were largely deployed by private schools during the school closures. According to Antwi et al. (2018) the deployment of ICTs in schools are tilted towards category 'A' school which are situated in urban centers. It further reported that the provision of ICT at the basic level are mostly limited to private schools (Ayebe-Arthur, Aidoo & Wilson, 2009).

Most pupils have lost out of learning completely since covid hit. My son's school is among the best public schools around, yet they haven't been able to utilise virtual learning opportunities, even though most children have access to virtual learning facilities. There was no effort made at all to explore the possibilities. It is baffling. Private schools were bolder and more committed about it. While I have been generally impressed with my son's school, I am disappointed at the lack of commitment to maintain teaching

and learning through the pandemic. Parents have been left the full burden of keeping wards afloat in their learning (Field Respondent, November 2020).

4.3. Income and Digital Inequality

The primary objective of this study was to examine the differential access to online education as a result of digital inequality through the mechanism of income inequality. Accordingly, the literature on digital inequality pointed to the need to move towards a multidimensional measure of digital inequality. The five approaches to multidimensional digital inequality come in handy in the analysis of digital inequality, specifically, the first three approaches to the measure of digital inequality are very relevant for this study though the study made extensive use of the first two approaches (DiMaggio & Hargittai, 2001). The first measure of digital differentials relates to variations in equipment or technology people use to access the internet – this includes the degree to which households have access to computers, software as well as connections that allow users to effectively engage with online content. The second approach prioritises differences in the independence of internet use – do users have autonomy over the use of internet? Do users have access to internet at home or work? Autonomy of internet use also refers to whether their use of internet is monitored, the frequency of use and the presence of competing users.

With regards to the first and second approaches to the digital inequality, the study sought to ascertain whether children have access to technological devices and the type of devices they have access to. The study also elicited information on whether children had access to internet or not. A good number of the respondents indicated their children had access to technological equipment and internet at home. 30 (54.55%) respondents and 26 (47.27%) respondents mentioned their children had access to technological equipment and internet respectively. Smart phones, laptops or computers and tablets were the equipment accessible to most children. The analysis also showed that more children had access to technological devices than internet. Access to both technological devices and internet are important requirement for successful online education. Increased access to technological gadgets makes it easy for schools to adopt and use technology in teaching and learning. Despite the high access to internet among respondents that is 47.27%, access to online education was lower at 36.36%. This may be explained by the lack of preparedness and ill-equipment of schools to run online education.

Apart from differential access to technological gadgets and internet as factors that fuel digital divide, income differentials is also reported to be a major cause of the existing digital divide across different income groups. Specifically, the

study examined the impact of income of parents on access to online education by their wards at the basic school level. Income of parents ranged from as low as GHC30.00 to as high as GHC10,000.00. The study grouped participants into four income groups. However, seven of the respondents did not provide information on their income as presented in table 2 below:

Table 2: Income of Respondents

Income Group	Income Level (GHC)	Frequency
1st	Below 500.00	12
2nd	500.00 – 1000.00	14
3rd	Between 1000.00 – 2000.00	9
4th	Above 2000.00	13
TOTAL		48

Source: From field data (Note: seven respondents did not provide information on their income)

Children across different income groups had access to both technological devices and internet. However, it was observed that access to equipment increased substantially among the highest income group. While 50 percent and 41.67 percent of those in the lowest income group reported their children had access to technological devices and internet respectively, the numbers doubled for those in the highest income group. For instance, 92.30 percent and 84.66 percent of parents in the high income group reported that their wards had access to technological gadgets and internet respectively. This finding resonates with the views of some respondents:

Covid-19 has generally affected access to basic education and is further exacerbating the inequity in education between the rural and the urban and the poor and rich households. Almost all the remote learning possibilities require some amount of access to basic ICT and internet which is largely absent in the rural communities. Poor households even in urban communities, are not also able to afford these. Thereby making access to education during covid-19 the preserve of the rich (Field Respondent, November 2020).

The preceding finding is in line with studies that suggest that digital split falls along prevailing lines of socioeconomic inequality (Porumbescu, 2020).

Similarly, the study found some correlation between income and access

to online education by children. Out of 12 respondents in the lowest income group, only four (33.33%) indicated their wards had access to online education and nine parents from the highest income group representing (69.23%) indicated their wards had access to online education. The excerpt below amplifies this finding:

Access is easier for middle class children than for lower class children, access is easier for urban children than for rural children. Cost of home equipment is expensive for low cost parents (Field Respondent, November 2020).

The findings above reflect those of Porumbescu (2020) and eLearning Africa (2020). eLearning Africa concluded that poor students and spatially dispersed are most at risk of missing out on education if there is no in class school (eLearning Africa, 2020). Similarly, people who are poor and live in less affluent neighborhoods pay more for less reliable service Porumbescu (2020).

Another interesting finding had to do with the type of technological devices available to children and the mode of access to online devices. Children from low income groups had access to mostly smart phones and also had lessons delivered via Whatsapp. On the contrary, children from high income groups had access to equipment such as laptops, computers and tablets. They also had their online studies via highly sophisticated media including Zoom and Google classroom. It is important to point out here that the type of gadget and mode of transmission of online studies greatly affects the effectiveness and quality of online teaching and learning. Gadgets such as laptops, computers and tablets are more effective in delivering lessons than smart phones. For instance, it is much easier to use word document on a laptop or computer than on a smart phone. Similarly, lessons via Zoom and Google classroom allow for synchronous learning than Whatsapp which do not have these synchronous features for a typical class size. These findings suggest that children from rich families access much effective online education due to the quality of gadgets at their disposal. This lends support to the assertion of Porumbescu that, though smartphones are now prevalent across all socioeconomic groups; they continue to be poor substitutes for broadband internet access for tasks such as working from home or for the purposes of online studies (Porumbescu, 2020).

Generally, many children may not have access to online education from their schools; however, there are many other online avenues where children can access online education. These avenues come at some cost as parents will have to pay for internet data to stream lessons. Even those who make use of Television lesson will first have to acquire a television. A little over 30 percent of respondents indicated that their children had access to online studies outside

their schools.

4.4. Challenges of Online Education at the Basic Level

The shift to online learning in basic schools is not without difficulties. Many parents were not impressed with the management of the online learning systems by schools and have accordingly, catalogued some challenges of the online learning in basic schools. While some parents complained about discontinuity of the online education, others complained about unreliable and high cost of internet. The excerpts below illuminate the challenges expressed by parents.

It is not been easy for parents. Acquiring the necessary technological tools was not easy at all. Particularly, when you have a number of children. Cost of data. The sustainability of the online learning is a factor (Field Respondent, November 2020).

The online platform is averagely managed because there are instances the network is not stable and sometime difficult in getting connected to the platform. Also, students' questions and feedback from teachers during lesson are not well managed. There are instances lessons are not successful or cancelled due to internet challenges" (Field Respondent, November 2020).

The challenges emanating from data is in line with other research findings that reports that though, digital divide is not limited to the developing world, it is much problematic there because internet is available to those who have the financial muscle (Zhang, 2013). Another challenge with the online education has to do with the inability of children to study on their own. For online education to be effective with children, parents have to be abreast with technologies deployed by schools as well as dedicate a good amount of time to supervise online studies of children. This means that parents who do not know how to operate platforms such as Whatsapp, Zoom and Google classroom may not be able assist their wards with the online studies. Consequently, their wards maybe left out of the entire online educational process even if the ward's school has introduced online learning. This view is reflected in the following response:

It has brought some kind of pressure on parents as they are to allocate some time out of their busy schedules to set up the online system for children when it is time for lesson and also monitor them. That is, parents have to be present throughout lessons to the neglect of other pressing activities. It has also changed the school social life of children as they are denied physical contact with friends making it difficult to share ideas or

learning experiences (Field Respondent, November 2020).

The preceding excerpt does not only draw attention to inability of children to make effective use of online education at the basic level, but also draws attention to the need of adult supervision of online learning systems. It also means that adults must have some level of technological proficiency to effectively supervise children with online learning platforms. eLearning Africa (2020) underscores this difficulty of accessing online materials by children. It argues that to successfully study outside the classroom, children need parental guidance which may not be feasible as some parents have limited education or maybe too busy to support their children to learn (eLearning Africa 2020).

5.0 Conclusions

This study set out to examine the impact of Covid-19 on access to online education, specifically the study sought to examine the differential access to online education as a result of digital inequality through the mechanism of income inequality. A very significant finding of the study was that differences in income affected access to online education by children. While children from lower income groups have access to online education, access doubled for children from high income groups. The study further found that children accessed online lessons with different technological devices. Whereas children from low income families accessed online lessons with smartphones, children from high income groups accessed lessons with computers, laptops and tablets. Similarly, there are differences in the multimedia used by schools in the delivery of lessons. While some schools use simple media such as Whatsapp, others, specifically children from high income groups accessed their lessons from sophisticated media such as zoom and Google classroom.

These findings have serious implications for access to online education at the basic school level on the one hand and educational resilience on the other. The shift from in class to online has exacerbated the gap between the rich and the poor in terms of access to education during the school closures. Both urban and rural poor struggled to acquire basic ICT devices and internet for their wards. However, the inability of the poor to acquire devices and access internet for their wards were not the primary reason for the unavailability of online studies. The inaccessibility of online education to the poor can be squarely put on the fact that many schools, especially, public schools did not have the capacity to roll out online studies. Consequently, many children from less privileged homes were left out of the educational system during the school closures as they largely patronise public schools.

Furthermore, the unequal access to education due to the pandemic leaves

many questions including those pertaining to education resilience or sustainability unanswered. The issue of sustainability becomes even more critical when basic education is drawn into the picture. Basic schools are the most hit by the pandemic for two main reasons: the first is the fact that majority of children at this level of education are unable to engage in independent study as well as source educational content from online resources on their own. The second reason is that basic schools in Ghana do not have any form of internally generated funds. Consequently, they rely solely on the government for resources. Basic schools were thus, waiting for government to fill the void by providing an alternative learning platform during the school closures. Unfortunately, the only designed policy to equip schools technologically (ICT4D) has not received effective implementation in the past. Hence, the country was completely unprepared when schools were forced to close. The pandemic therefore serves as a clarion call on the government and other stakeholders in education sector to take quick and effective measures to equip schools, parents and school children with the needed skills, equipment and infrastructure to efficiently adopt and use ICTs in education. Stakeholders in the education sector in particular should start thinking of measures to make the education sector sustainable and resilient against pandemics and disasters that pose grave existential threats to the sector.

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