

Cameroon's COVID-19 Pandemic Education Response and the shift to Distance/Digital Learning

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“One child, one teacher, one book, one pen can change the world.”

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Abstract

The outbreak of the COVID-19 pandemic in February/March 2020 and the imminent measures to curb its spread brought education to a complete halt while stakeholders figured out how to ensure education continuity in Cameroon. Cameroon's education response mirrored that of other sub-Saharan African countries that have been generally considered to be unprepared for distance learning solutions. While the world was already leaning towards digital learning and virtual education to supplement traditional forms of learning, the COVID-19 pandemic revealed the need for structured and suitable systems of distance learning facilitated by digital tools and technology.

The purpose of this study is to examine the preparedness for contingencies of this nature, and sufficiency of the measures employed to ensure education continuity by the Cameroon government and other education stakeholders in response to the Covid-19 pandemic; the challenges to an effective and viable distance learning alternative and what needs to be done to reinforce distance/digital learning realistically in Cameroon. The study also aims to demonstrate the need for and importance of a crucial and substantial digital learning policy, which would put in place measures and conditions necessary for equitable and sustainable digital access for pupils and students in Cameroon in line with goal 4 of the 2030 Agenda for Sustainable Development.

The study employed a mixed methods approach to data collection: a cross-sectional survey, stakeholder interviews, and evidence review. The survey and interviews focused on students in Forms 1 – 5, Lower Sixth and Upper Sixth, and their parents/guardians and teachers. The findings reveal lack of satisfaction with the response of the government and other education stakeholders characterized by systematic, infrastructural, and material challenges, aggravated by already existing inequalities regarding access to education. The study argues that the COVID-19 response is a wake-up call to the Cameroon government and other education stakeholders to act on policy and take concrete measures aimed at strengthening digital education systems.

About SODEI

Solidarity and Development Initiative (SODEI) is a UK registered charity working to inspire, engage and empower children and young persons in Cameroon by increasing their chances to succeed through education. We do this by promoting equitable access to quality education through research and advocacy, skills training and education support. We also create spaces and platforms to foster participation in youth and community development activities.

Our vision is a society where children and young people have equitable access to quality education and opportunities, where they can confidently participate as agents of change and development while making positive contributions to decision-making in their homes, communities and nation.

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Background to the study

The first cases of the COVID-19 virus infection in Cameroon were observed in February/March of 2020 and by April of 2020 it had become imperative for measures of public health and safety to be put in place to curb the infections and protect persons. The imminent measures¹ for this purpose, would bring education to a complete halt while stakeholders figured out how to ensure education continuity in these trying times. The nationwide paralysis of the education sector caused by the pandemic meant that over 6 million learners in primary and secondary schools were out of school. (UNSD, 2020)² The start of the pandemic in Cameroon met with multiple crises affecting the education sector in many parts of the country. UNICEF and other humanitarian actors observed that the crisis in the English-speaking regions had displaced over half a million people and deprived 700,000 children of schooling (SODEI Report, 2021)³.

The government and other education stakeholders responded to the pandemic with the objective to ensure education continuity. This response consisted in setting up various distance learning platforms on radio, TV, and online. These platforms included CRTV radio and tv learning ([L'école à la radio](#) and [L'école à la télé](#)), broadcasting lessons in both English and French to facilitate learning from home. The Ministry of Secondary Education additionally set up a unique online learning platform providing lessons to children in secondary education.⁴ Other education stakeholders such as educational institutions (including public and private schools), IT companies, NGOs and private individuals set up different distance learning initiatives to ensure learning continuity (Béché, 2020). Huawei for example deployed the platform "Learn On" in May 2020, to ensure the continuation of its certification programs in Cameroon.⁵ Another private initiative

¹ Cameroon Government's Response Strategy to the COVID-19 Pandemic (March 17, 2020). Retrieved from <https://www.spm.gov.cm/site/?q=en/content/government-response-strategy-coronavirus-pandemic-covid-19>

² UN Sustainable Development Group (2020), United Nations COVID-19 Socio Economic Response for Cameroon. United Nations Cameroon. Retrieved from <https://unsdg.un.org/resources/united-nations-covid-19-socio-economic-response-plan-cameroon>

³ SODEI Report (2021), Baseline Research: Education in crisis in the English-speaking regions of Cameroon. Retrieved from <https://www.sodei.org/wp-content/uploads/2021/03/Baseline-Research.pdf>

⁴ UNESCO (2020), National Learning Platforms and tools. Retrieved from <https://en.unesco.org/covid19/educationresponse/nationalresponses>

⁵ <https://www.businessincameroon.com/ict/2805-10362-cameroon-huawei-deploys-e-learning-platform-learn-on-to-ensure-continuity-of-its-certification-programs>

includes Jean Baptiste Essissima, referenced by Béché (2020), who designed and launched an application called *SchoolMobile* a paid online revision platform for secondary school students in Africa on March 27, 2020.⁶ The platform which runs on mobile phones and computers already hosted more than 5000 students by April 20, 2020.

While the world was already leaning towards digital learning and virtual education as a supplement for traditional forms of learning, the COVID-19 pandemic revealed the need for structured and suitable systems of distance learning facilitated by digital tools and technology. Cameroon's distance learning response comprising of institutional and individual initiatives, online and offline platforms has been described as "a patchwork combination of institutional and individual initiatives, learning management systems and information and communication tools" (Béché, 2020, p. 762) Although the government's immediate reaction in setting up initiatives such as School on TV was initially praised, it received mixed reactions by the conclusion of the first phase which focused specifically on examination classes. Reactions from students, teachers, and education stakeholders pointed to lack of preparedness and readiness by all stakeholders including the government and private education providers as well as the students themselves (Béché, 2020). Cameroon government's education response mirrored the response of other sub-Saharan African countries that have been generally considered to be unprepared for distance learning solutions (Haji S., Moluayonge, G. and Park, I., 2017). The approaches employed witnessed the shortfall of limited and difficult accessibility characterized by slow internet connectivity, frequent power failures, lack of sufficient radio and tv coverage, further exacerbated in rural enclaves. This raises the question of preparedness for unforeseen situations of such a magnitude as the COVID-19 pandemic and the global trend moving towards virtual learning methods in addition to traditional learning methods.

Purpose of the research

This paper aims to examine the preparedness for unanticipated circumstances, and the sufficiency of the measures employed to ensure education continuity by the Cameroon government and other education stakeholders in response to the Covid-19 pandemic, the challenges to an effective and viable distance learning alternative and what needs to be done to reinforce distance/digital learning realistically in Cameroon.

This paper also aims to demonstrate the need for and importance of a crucial and substantial digital learning policy, which would put in place measures and conditions necessary for equitable and sustainable digital access for pupils and students in Cameroon in line with goal 4 of the 2030 Agenda for Sustainable

⁶ For more information visit: <https://www.schoolmobile.net/about/>

Development, ensuring equal access to uninterrupted, quality education for all. The use of digital tools is not an end by itself, but the importance is to improve the access to and quality of education ultimately.

Scope of Research

Whereas the Cameroon government was obligated to take a new approach to ensure the right to education facing the COVID-19 pandemic like the rest of the world, their response seemed to elicit mixed reactions and obviously pointed to an opportunity for holistic improvement. The importance of digital access and education was sorely highlighted in the advent of the pandemic, hence the advocacy for new digital methods of learning to be included into the current education policy.

The scope of this study is limited to examining the right to education and the right to information as they relate to digital access specifically within the context of the response of the Cameroon government to education before, during and after the pandemic prospectively. In this light the study will examine the response proper, general preparedness, actions by different stakeholders and the availability of tools for digital access through the lens of education policy and available literature. The study will adopt a top to bottom approach whereby reactions will be examined from the wider perspective of the government down to the narrower scope of communities and families.

Ultimately, this study is intended to be an important factor in building the case for digital access as an independent human right, though it might be clearly linked to the right to education and the right to information and freedom of expression.

State of research on the subject

The response to the COVID-19 pandemic is ongoing and constantly adapted to changing realities. Existing research dwells mostly on preparedness and adequacy of the response of Cameroon to the pandemic.

Prior to the pandemic, several Information and Communication Technology (ICT) projects were implemented in secondary schools which aimed to reduce the digital access gap amongst students. Between 1998 and 1999, some private and mission schools such as College François Xavier Vogt made efforts to introduce the use of ICT in education with limited success (Nsolly N. and Charlotte N. 2016). Nganji et al (2010) reported on one of the pioneer projects, the Computer and Internet Access Centres (CIAC) project, launched in the year 2000 by the Association for Development, Communication and Environment (ADCOME), a non-governmental organisation with headquarters in the Southwest Region of Cameroon. The CIAC project focused on bridging the digital divide mainly in schools through installation of computers and internet and recruiting computer engineers to teach in the

schools. Many other such initiatives have been launched to enhance knowledge on digital tools and technology and facilitate digital access. Meanwhile, the Cameroon government officially started integrating ICT into public school curriculum in 2001. This culminated in the setting up of multimedia centres in some secondary and primary schools and the development of a national strategy for integration of ICT. This was later followed by the development of ICT programs for secondary schools in 2003, the establishment in 2007 of the field of Computer Science and Education Technologies to train general secondary school ICT and Computer Science teachers in ICT, the publishing of ICT syllabus and national sequential schemes of work in 2008, and the institution in 2011 of ICT as a school subject, also made compulsory for the Ministry of Secondary Education official examinations. The state also established partnership with the private sector, sometimes under the umbrella of Parent Teachers Associations (PTA), to maximize the integration of ICT in education (Nsolly N. and Charlotte N., 2016).

Despite the efforts towards integrating ICT into education and enhancing digital access for learning in Cameroon, there have been challenges which became evident during the COVID-19 orchestrated school shut-down. The absence of a clear vision and planned strategy for ICT integration in Education (Nsolly N. and Charlotte N.), the lack of technological resources, knowledge and skills (Nsolly N. and Charlotte N. 2016, Farinkia, N. and Tambi, A., 2018, Farinka, N. 2018, Njouny, M. E., 2021), as well as attitudes and beliefs of teachers and parents (Haji S., Moluayonge, G. and Park, I., 2017, Mbakwa P. 2019, Farinkia, N. and Tambi, A., 2018, Nsolly N. et al, 2016, Njouny, M. E., 2021) have been identified as some of the major challenges. The focus of government and private sector initiatives has been seen to be more theoretical than practical as a result of the lack of ICT infrastructure (Nsolly N. and Charlotte N., 2016). Meanwhile it has also been argued that in Cameroon, the "Physical Integration Approach" to technology in education which involves the introduction of technological equipment for use by students and teachers, outweighs the "Pedagogical Integration Approach" which is a more habitual and sustained use of ICT in education, oriented towards change in educational practices and the improvement of teaching and learning experiences ⁷. (Kindzeka Nestor n.d.).⁸

⁷ IsaBelle, C. (2002) explains that the Pedagogical integration Approach is the appropriate, habitual and regular use of ICT in education that produces a beneficial change in educational practices and improves teaching and learning. While the Physical integration Approach is understood as the introduction of technological equipment in educational institutions for use by teachers and students.

⁸ Kindzeka Nestor. (n.d.) PLAN OF ACTION FOR DIGITAL EDUCATION IN CAMEROON (PADEC). Information impact globe, available at <https://www.ii-globe.com/plan-of-action-for-digital-education-in-cameroon-padec/>

Emmanuel Béché is of the opinion that the approaches adopted by the Cameroonian government regarding education revealed that the Cameroonian education system is plagued by disorganisation, educational inequalities and exclusion – problems which affect learners’ daily lives on a personal level. According to him, the challenge for Cameroon in times of confinement, was how to ensure pedagogical continuity through new educational technologies without exacerbating existing educational inequalities (Béché, 2020).

A survey carried out by Akaba A. James and Nteta Philip on the advancement of e-learning in Cameroon during the pandemic⁹ revealed a series of highs and lows. While most of the surveyed sample population decried shortcomings such as the exorbitant cost of internet data, the inability of TV and radio distance learning methods to properly engage students, poor accessibility, and the fact that the pandemic took many institutions unaware among other things, some remained hopeful that better methods could be employed to ease into digital learning as an alternative.

The National Observatory of Economic, Social and Cultural Rights reported that there was a violation of the right to education, in particular of children from the most disadvantaged households in urban areas, villages and other refugee camps due to the fact that the measures taken in response to COVID-19 to ensure the continuity of the supervision of school children did not include facilities to facilitate their inclusion and access.¹⁰ The report also asserted that solutions for distance education via ICT and mass media did not include children from poor households who are disconnected and do not have access to electrical energy.¹¹

Though the response by Cameroon was not identical to that of similar countries especially within sub-Saharan Africa, a lot of similarities could be observed which pushed researchers to explore alternative approaches.

The Global Partnership agrees with the World Bank that the effect of COVID-19 on education could be felt for decades to come. The impact transcends learning loss, which is a short-term issue, to a more long-term issue of diminishing economic

⁹ Akaba. J. and Nteta. P. (2020). Covid-19 School Closure in Cameroon -How is the Education Sector Advancing With E-Learning?

¹⁰ National Observatory of Economic, Social and Cultural Rights. (2020). State of the implementation of Economic, Social and Cultural Rights in Cameroon during the COVID-19 crisis

¹¹ Ibid

opportunities.¹² In this light, some necessary reforms will have to be made to change education policies and make education relevant for the student.

Bernard et al. (2020) advance that education is one of the largest and most consequential government activities in Africa, and policymakers and aid agencies ignore it at the continent's peril. Indeed, by continuing to support education during the pandemic, governments can strengthen their countries' immediate COVID-19 response and long-term recovery.¹³

Methodology

The evaluation employed a mixed methods approach to data collection: a cross-sectional survey, stakeholder interviews, and evidence review. The target population for the survey and interviews are students, parents and guardians of students, and school staff in the Southwest region of Cameroon, specifically in Buea and Limbe. Specifically, this study focuses on students in Forms 1-5, Lower Sixth, and Upper Sixth.

Cross Sectional Survey and Interviews

This study utilized a cross-sectional survey approach, with surveys designed and disseminated to the three groups referenced in the target population above. Respondents were asked similar questions in the surveys, with minor alterations made to capture differences between student, adult, and school staff member. Each survey was separated into four different sections: demographic information, perceptions of access to internet and digital tools, understanding of digital access and digital learning, and opinions regarding digital learning during the COVID-19 pandemic.

The purpose of the surveys is to capture information on the types of technology young people can access, any perceived barriers in utilizing technology in education and views towards digital tools to support education. Further, it seeks to capture the breadth of views and to determine whether responses differ according to respondent group, protected characteristics, and computer literacy program attendance.

Parent and guardian surveys were conducted online, with an invitation to participants shared through social media platforms (Facebook, LinkedIn, Instagram) and WhatsApp parent groups. Student and school staff surveys were

¹² <https://www.globalpartnership.org/blog/covid-19-and-education-sub-saharan-africa-5-actions-way-forward>

¹³ Bernard et al., (June 4, 2020) Education is crucial to Africa's Covid-19 Response OP-ED Brookings. Retrieved from <https://www.brookings.edu/opinions/education-is-crucial-to-africas-covid-19-response/>

disseminated online and in person as a paper survey. Online invitations for these surveys were shared through social media platforms (Facebook, LinkedIn, and Instagram), with a specific focus on student groups on Facebook (GCE preparations, for example). Paper surveys were disseminated and conducted in person, with SODEI volunteers scheduling appointments with schools through their admin staff, handing the surveys to students who provided their input and returned it to the volunteer on site.

To further elaborate on some important, open-ended questions included in our survey on the use of digital tools in education before and during COVID-19, we conducted interviews with six teaching staff drawn from six schools in Buea and Limbe. Four of the six interviews were conducted via zoom while 2 others were conducted in person. An interview guide was prepared and two of SODEI's research team members separately conducted the interviews.

In addition to the survey and interviews, a small focus group discussion (FGD) was conducted to obtain more in-depth information from students in Limbe. Nine students from forms 1 to 3, 4 to 5 and Lower Sixth participated. The major questions posed reflected the use of online learning and devices to bridge technological gaps, access to the internet for learning, and a comparison of digital education and computer learning in schools and after-school programs.

Evidence Review

To determine proposed and/or planned policies and procedures, online documents at an administrative level, both local and national, will be reviewed. The review will identify approaches and visions for digital education as set out in policies and strategies in Cameroon. To explore themes in existing research, an evidence review will be undertaken. This study focuses on literature published in the last 5 years and on the use of digital tools and learning in education in Cameroon. This will cover barriers in digital education, successes and benefits of digital learning and perspectives on the use of digital tools to support learning.

Response Rates

In total, 814 students from Buea and Limbe, in Forms 2-5, Lower Sixth, and Upper Sixth participated in this study. Of these students, 481 (59.09%) are female, 307 (37.71%) are male, and 26 (3.19%) preferred not to indicate their gender. 172 (21.13%) are in a government school, 256 (31.45%) in a mission school, and 386 (47.42%) in private school. Response rates from adult participants was significantly lower with only 20 parents and guardians, and 39 school staff (24 teachers, 7 admin, 4 leadership, 3 IT, and 1 other) offering their feedback

Limitations

Limited response from parents, guardians and school staff will make any comparison between their responses and that of the students limited in scope.

Additionally, responses by forms were closely linked to the type of school: government school responses were predominantly from students in Form 3, Mission for Forms 4 and 5, and Private for Forms 4-5 and Lower Sixth. The analysis will focus on student responses based on the type of school but not on the student's age or form. Limited literature to consult for this research was another general limitation.

Findings

This section aims to determine the preparedness and sufficiency of measures employed by various stakeholders to ensure educational continuity during the pandemic. The data collected is explained by means of three research questions which scrutinize various aspects of these contingency measures.

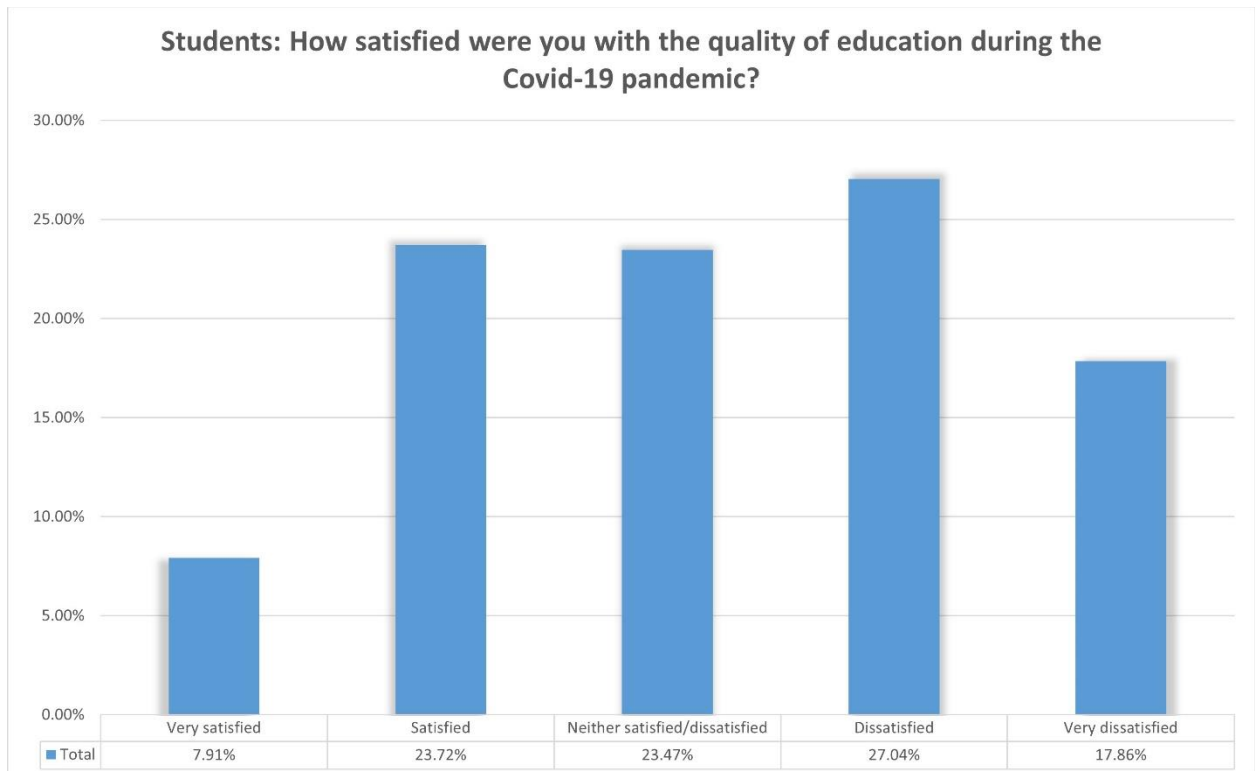
1. How appropriate was the response of the government, educational institutions, and other stake holders to guarantee continuity in education or learning in response to the Covid-19 pandemic?

Students, along with parents and guardians, expressed mixed sentiments regarding the success of distance/digital learning during the COVID-19 pandemic, but school staff tended to be more positive about the shift to digital learning. For student respondents, 45.84% indicated that there was a positive impact to their education with the shift to digital learning, while 40.72% indicated a negative impact (13.44% stated there was no change). The split was similar with parents and guardians, with 45.00% perceiving a positive impact and 35.00% negative. Unlike students and parents/guardians, school staff believed that education was positively impacted with the shift to digital learning: 61.54% indicated a positive impact, while 20.51% indicated a negative impact. We observed substantial differences between the perceptions of school staff members regarding the positive impact on education during the pandemic in the surveys and during one-on-one interviews where they expanded on concerns with the shift to digital learning. Teachers' attitude towards the COVID-19 education response could be seen as cautiously optimistic. In the interviews conducted with 6 teachers, they attested to the relevance of digital education in an evolving world citing time management, diversification, convenience, learning continuity in times of crisis like the current COVID-19 pandemic, information gathering, skill development, and competitiveness. Yet, despite being positive about their schools' response and the government's initiative, they questioned the preparedness and quality of response.

Students were similarly split regarding their satisfaction with the quality of their education during the pandemic. 31.63% of students indicated some level of satisfaction with their education during this time frame and 44.90% had some level of dissatisfaction (see Figure 1.A, below). The findings for parents and guardians closely mirrored those of the students: 40.00% indicated some level of

satisfaction and 50.00% were dissatisfied or very dissatisfied. In the open-ended response section of the survey, several students expressed that the ability to learn should be encouraged, that it provided flexibility with their school curriculum, with one stating that she “loves the flexibility it comes with, one can learn anywhere and anything” and another stating that digital learning “is a gateway to future technological advancement and should be a very useful tool nowadays.”

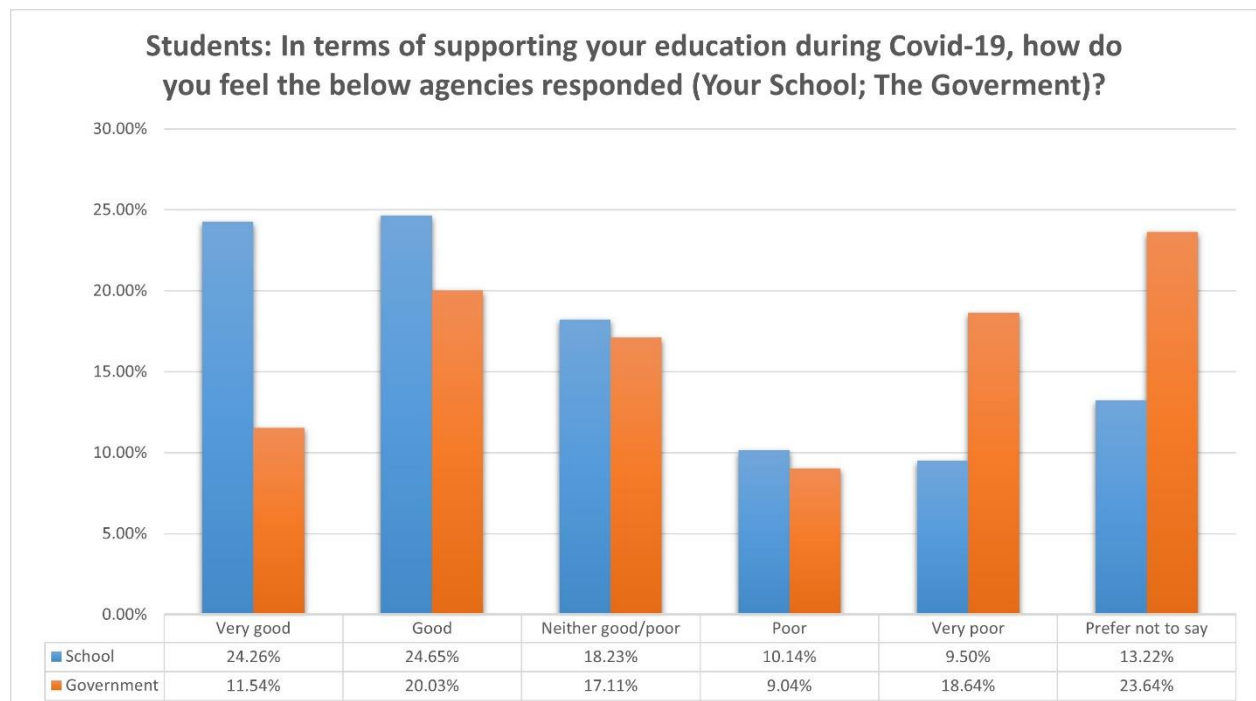
Figure 1.A: Student Perception of the Quality of Education during the Pandemic



The contrasting outcome of the students feeling a positive impact on their education and yet feeling dissatisfied with the quality may be linked to access and implementation. Concerns regarding access to digital learning tools are discussed in a separate report (*Digital Education in Cameroon: An Analysis into Available Tools and Perceptions Regarding Benefits, Barriers, and Access to e-Learning Tools in Southwest Cameroon*), but students provided open feedback that digital learning during the pandemic was “stressful due to lack of digital tools” and “more opportunities should be created for the less privileged to increase knowledge for a better future.” Generally, students cited lack of infrastructure, limited internet connectivity, and lack of hardware as barriers to accessing digital learning tools and negatively impacting their learning during the pandemic. Further, some students indicated that digital access without proper implementation or guidance could lead to misuse, with one stating that “digital education works well and is a modern way for educational purpose. But due to the bad governance in our country, all I can say is we are all just joking.”

Despite having a split perception on the quality of education, students tended to rate their school’s response to supporting their education during the pandemic more positively than the government’s: 48.91% rated their school’s efforts as good or very good, while only 31.57% rated the government’s response equally positive. Further, many students declined to give an opinion regarding the government’s response, (with 23.64% choosing to prefer not to say) but were more willing to rate their school (see Figure 1. B, below). Those students that provided open feedback regarding support to their education during the crisis stated that the government should improve upon the resources available either through the provision of a computer or the creation of digital education centers “to increase standards of education.”

Figure 1.B: Student Perception of Education Support During the Covid-19 Pandemic



Interviewed staff members and the student focus group also expressed concern about the quality of education. All staff interviewed pointed to lack of access to tools including hardware and internet as a major challenge to the advancement of digital education in general and greatly affected the COVID- 19 education response. While most staff stated that the schools (public and private) they have worked for had computer labs, they pointed to major issues involved in the operation of these labs including, insufficient computers, limited time allotted to students, lack of well-trained ICT staff, etc. One teacher stated:

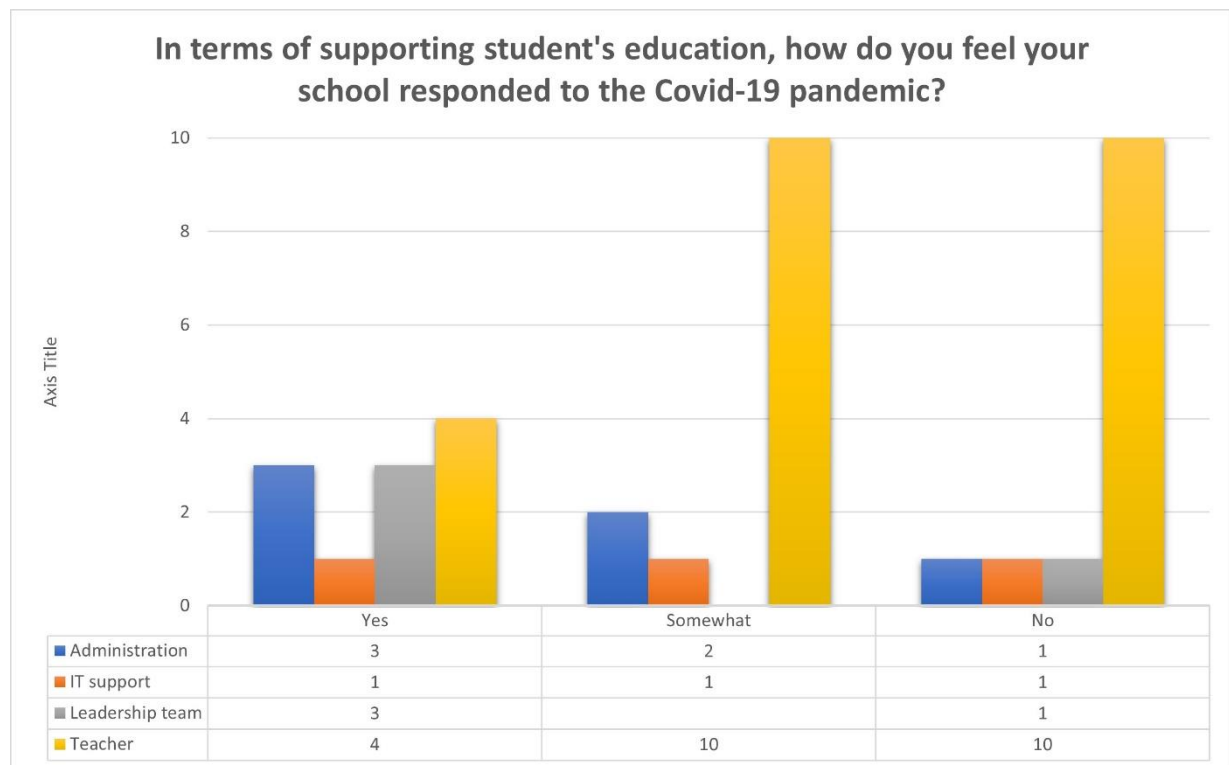
In most of the public schools I work for, students who study ICT have access to the computer laboratories. Whereas students who don't have anything to do with ICT wouldn't have access to the

computers... In addition, these computer laboratories, which are strictly for ICT students, can only be accessible during computer practical lessons which maybe once a week, for 90 minutes. They do not have open access.

Most of the participants in the FGD didn't have access to devices and the internet in school. Some attested to having learnt more about computers and have more access to devices and the internet through after-school computer programs. One participant, a secondary school student stated that their school computer lab is always closed for students.

School staff responded positively concerning how well their school supported students during the pandemic but were divided about how supported they felt and how they felt the government supported students. Nearly 54% of school staff indicated that their school's support of student education was very good or good, with only 18% indicating that it was poor or very poor. School staff were less positive about their own support during the pandemic, with only 29% saying they felt supported, 37% somewhat, and 34% not supported. Due to the small sample size of school staff, the percentages here are misleading. Looking strictly at the number of respondents, teachers overwhelmingly indicated feeling somewhat or not at all supported (only 4 out of 24 responding teachers stated yes to feeling supported during the pandemic) while school leaders and admin tended to respond more positively (see Figure 1.C below). Lastly, perceptions of government support for students were nearly equally split: 41% indicated that government support of education was good or very good, and 38% indicated that it was poor or very poor.

Figure 1.C: School Staff Perception of Education Support During the Covid-19 Pandemic, by Role



The COVID-19 education response came as a matter of urgency, forcing an immediate reaction from government and private stakeholders. Irrespective of the initiatives to ensure education continuity during the crisis, the survey data reveals that those directly affected – teachers and students didn't feel supported enough to guarantee effective teaching and learning continuity. This once more raises the issue of lack of preparedness for an effective digital learning takeoff in Cameroon. Generally, the government's preparedness for digital learning transformation has come under scrutiny with regards to the lack of resources ICT infrastructure and a proper digital education policy (Nsolly N. and Charlotte N., 2016, Farinka N. 2018). Béch  (2020) argues that the move to the use of technology for learning during the COVID-19 pandemic revealed the shortcomings of education structures in Cameroon. To him, despite the urgency of the response and the unforeseeable extent of the crisis, the major challenge was the low level of technological development in the country and particularly in schools. Consequential changes such as the inclusion of a digital education component to education in general should be piloted by the government in partnership with other stakeholders, through policies and putting certain resources at the disposal of schools, especially those that cannot afford it. It is the prerogative of the state to provide structures and resources for this to be successful. The number of resources available to certain kinds of schools is not sufficient and it cannot be their responsibility alone to meet up with a national ideal.

Lack of preparedness was not only evident at the level of government, but also for teachers and students who were not ready to delve into distant learning (Béché, 2020). A possible explanation for this is the fact that lack of training and resistance to change are seen as some of the reasons for teachers' low use of digital technology in education in Cameroon (Haji et al. 2017). Mbome and Atong (2020), also indicated that teachers may not be able to keep up with the constantly evolving technologies. Most of the staff interviewed evoked lack of computer knowledge and training opportunities as a setback to an effective COVID-19 digital learning response. A government schoolteacher stated that:

Teachers need to be trained on E-learning and the use of digital learning systems. They are very lacking in skills. Right now, in most schools, the only teachers who can boast of the knowledge to use these technologies are computer science and other technical teachers. Respondent 6 a private school teacher added that: students and some teachers cannot even use computers which is one of the challenges we faced in our school especially during covid-19 lockdown period.

While one of the ICT staff members interviewed stated that training opportunities are available for teachers, he observed it wasn't enough and that teachers need to take personal initiatives to learn.

2.How far does the view differ between different stakeholders – public and private, teachers and students?

Overall, respondents shared similar views regarding the usefulness of digital tools in education and the notion that digital access is a human right. Regardless of the type of school (mission, government, or private), students were just as likely to have heard about e-learning prior to the pandemic (with 67% - 68% indicating yes) and to believe that e-learning has a place in contemporary education (94% - 97% across the three school types). Significant differences between male and female students were observed, which will be covered in the challenges section below. All participating parents and guardians surveyed indicated that digital learning is important for their children and only one was not aware of digital education prior to the pandemic. All responding school staff indicated that that digital learning has a place in education, but 2 of the 24 teachers were not aware of e-learning prior to the health crisis.

With the more nuanced questions, there are some differences among students from different types of schools. For government and mission schools, 76% and 78% (respectively) feel included in decisions about digital education, but this percentage drops to 71% for private schools. Interestingly, despite feeling less included in the decision making, private school students were slightly more likely to feel like their views are reflected in the decisions made (64%, compared to

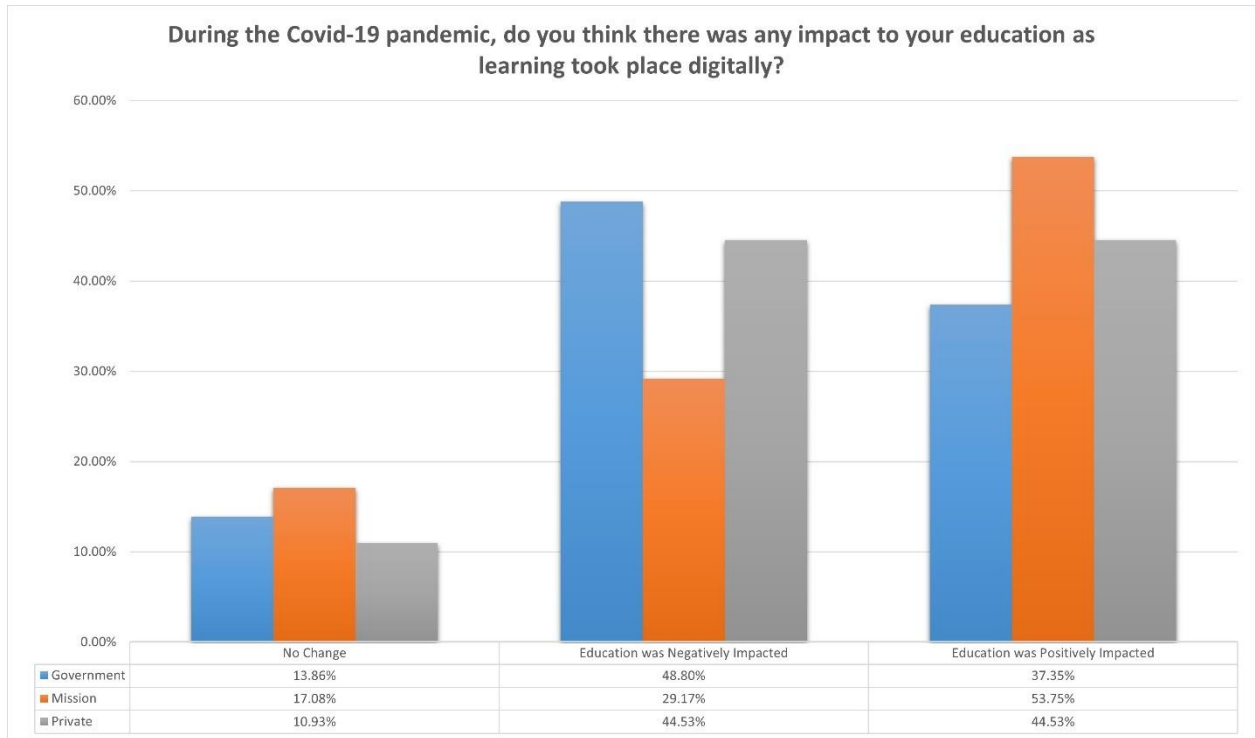
60% - 61% for government and mission schools). Key to note here is that, while students tend to feel included in the decision-making process, they are less likely to feel that the final decisions made regarding digital education reflect an understanding and incorporation of their views.

Of the three types of schools, government students were most likely to be dissatisfied with their education during the pandemic. Looking only at their responses, students attending a government school often stated that they thought there was a negative impact to their education as learning took place digitally, with 48.80% of these students perceiving a negative impact to their education during the pandemic, as opposed to 37.35% perceiving a positive impact (See Figure 2.A below). Mission students generally felt there was a positive impact to the education (53.75% indicated positive and 29.17% negative), while private school students were split with 44.53% choosing either negative or positive impact to the education.

Interestingly, government students were most likely to have utilized at least one of the available e-learning tools listed on the survey (classwork assigned alone, classwork completed online, online lessons, radio lessons, submitting classwork online, and tv lessons). 16.47% of private school students and 14.29% of mission school students indicated that they were unable to access any of the five e-learning tools listed on the survey, as opposed to 10.84% of government students.

The alternative styles of learning applied at the start of the pandemic depended not only on the ability to use digital tools but also on the availability of these tools outside of the school settings, especially at home. DataReportal (2020) reports 7.87 million internet users in Cameroon in January 2020, in a population of over 20 million. If this is indicative of the available devices or tools for learning, education continuity during the pandemic would have faced considerable drawbacks unarguably. Moreover, students were used to studying in structured environments where they were instructed on what to do by their teachers. Self-studying only extended to assignments given by the teachers after their days at school. Studying by themselves even with access to digital tools would prove difficult as students needed to develop a structure for themselves. One teacher expressing the downside of the digital learning strategy during the pandemic indicated that "... some of our students are not disciplined enough to study on their own, they do not focus on their study. The internet is full of distractions, students turn to divert their study periods to doing other harmful activities on the internet. So, it is not very effective, especially if they are not followed up." For the lack of structure or the advent of one so ambivalent, a positive impact would hardly be felt.

Figure 2.A: Student Perception of Impact to Education during the Pandemic, by Type of School

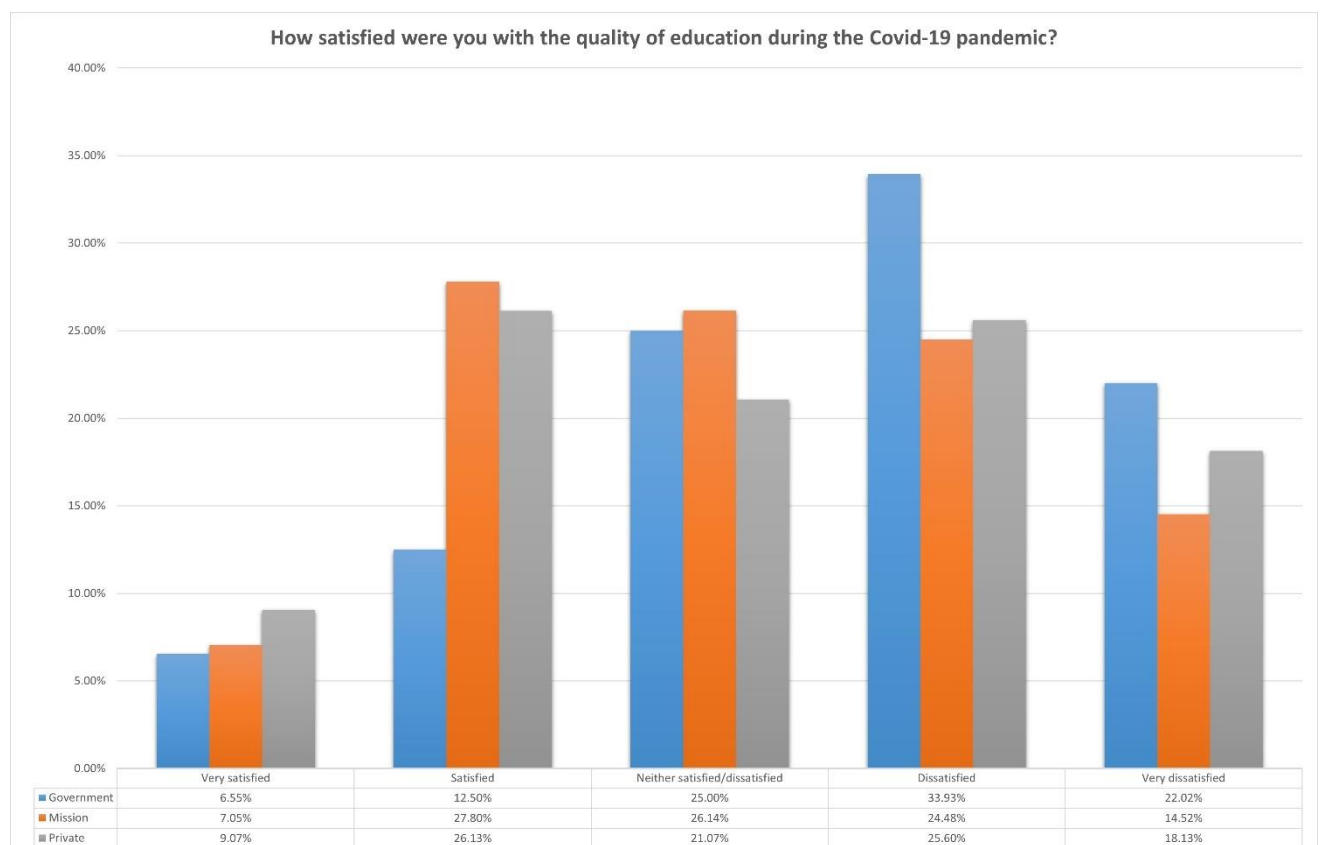


Relating to the question of student satisfaction with the quality of education during the pandemic, students at mission schools reported to have been more satisfied than students of public and private schools. More than half (55.95%) of government school students indicated some level of dissatisfaction with the quality of their education during the pandemic, as compared to 39.00% for mission school students and 43.73% for private school students (See Figure 2.B below). Understandably, more students have access to and attend government schools as compared to private and mission schools. The resources for digital learning, although existent, would be unable to cater to the learning interests of every student which explains the prioritization of some (ICT students). An ICT teacher interviewed from a government school remarked that "In my school, we have just about 50 to 60 functional computers ... we have a school of about 2000, so if we just leave it be sometimes, some might not even go to class and occupy a machine the whole day depriving others of access." This indicates not only limited but regulated access to digital tools during regular school times. Another teacher from a government school commented that "Usually the norms for enrollment in schools are not followed. In our school for example, you can find 3 students per computer during the ICT lessons, which makes studies very difficult."

The private school students expressed the least amount of dissatisfaction, which may seem unusual. Even though a lack of access to equipment and the internet seems to be a recurring theme, government schools are most likely to have better access. It might be interesting here to explore the reasons for satisfaction or

dissatisfaction on the part of students by evaluating the quality of education. On one hand, one might explore the adequacy of measures and available tools and on the other hand one might explore the capacity and willingness of teaching staff to use digital teaching methods. The apparent gap in the training of teachers to use digital methods of teaching and communication is also reflected in the resources which were used to ensure the continuation of education. This is echoed by the teachers and school staff interviewed and by current research. Farinkia and Tambi (2018) explain that teachers' use of ICT has been less than optimal because of lack of training, resistance to change, no access to technological resources, lack of focus on ICT, low confidence and low competences, formal opposition by teachers to use pedagogical tools that they were not initially trained to utilize in a professional way, etc., thereby creating a learning environment characterized by insufficiency and incompetence. Ultimately, the fate of education at the start of the pandemic and the use of digital learning tools and platforms for learning was decided by the inherent absence of these practices as a component of education in Cameroon.

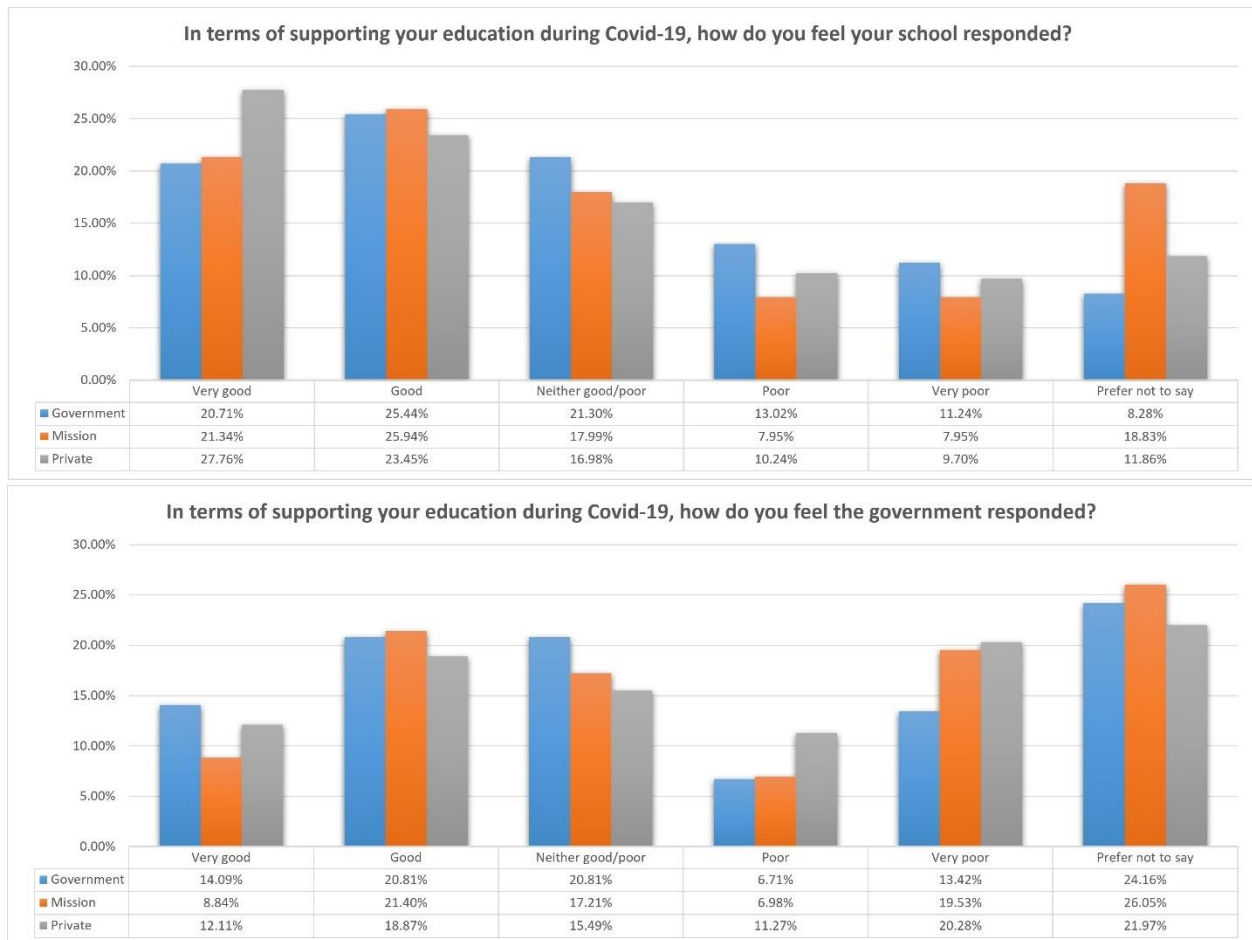
Figure 2.B: Student Satisfaction with the Quality of Education during the Pandemic, by type of School



Despite the general apprehension with the outcome of the emergency measures put in place to ensure continuity in learning, students were generally positive about how their school supported their education during the pandemic: 46.15% of government, 47.28% of mission, and 51.21% of private students rated their

school's support as good or very good. Conversely, 34.90% of government, 30.23% of mission, and 30.99% of private school students rated the government's support of education equally positively (as good or very good). This is not to say that students rated the government's support as poor; students were more likely to choose "prefer not to say" when asked about the government as opposed to their school: 13.22% of students opted out of sharing their opinion on their school's support, as opposed to 23.64% who opted out to respond on how the government supported their education during the pandemic (see Figure 2.C, below). Out of prevailing prudence to not question authority, it can be expected that students would be wary of giving opinions on the competence of their school authority or the government because of the current socio-political climate of the two English-speaking regions of Cameroon, especially if they are being critical. Of the three types of schools, mission school students were most likely to opt-out of responding about how their school supported their education during the pandemic (18.83% chose "prefer not to say", as opposed to 8.28% and 11.86% for government and private school students, respectively). This raises the question of the importance of youth participation in general and especially in education policy. In a context where the student feels valued and protected, they will be more likely to express their opinions without apprehension, facilitating the task of the policymakers in designing structures and measures more suited to their learning needs. The report on Perceptions of Digital Access in the Southwest region of Cameroon also done by SODEI, discusses in detail, the importance of youth participation. (See Report on *Digital Education in Cameroon: An Analysis into Available Tools and Perceptions Regarding Benefits, Barriers, and Access to e-Learning Tools in Southwest Cameroon*).

Figure 2.C: Student Perception on Support to Their Education, by their School or from the Government



3.What challenges were faced and what best practices can be shared and implemented wider?

Students, parents and guardians, and school staff identified three major challenges associated with implementing digital learning during the pandemic: lack of access, ineffective e-learning tools, and a significant gender gap in perception between male and female students. Lack of access is covered in more detail in SODEI’s report (*Digital Education in Cameroon: An Analysis into Available Tools and Perceptions Regarding Benefits, Barriers, and Access to e-Learning Tools in Southwest Cameroon*), but this barrier is defined by financial, infrastructural, and training challenges. This is also reflected in other pre-Covid-19 research as a major factor that hinders digital learning take-off in Cameroon and most sub-Saharan African countries (Nsolly N. and Charlotte N. 2016, Farinkia, N. and Tambi, A., 2018, Farinka, N. 2018, Njouny, M. E., 2021). Many of the students surveyed in this research (49.88%) perceived limited financial resources as the most significant barrier to e-learning, followed closely by limited electricity (43.98%), limited internet access (42.38%), and limitations on IT skill or

knowledge (34.03%). Further, while only 3.09% of students indicated an inability to access the internet at home through any devices, the majority (51.34%) access e-learning tools through their mobile phone; less than 20% have access to a laptop or a desktop computer at home.

In their open-ended comments, several students, parents and guardians, and staff suggested that computers should be made more widely available, with schools having computer labs and/or the government providing free laptops to make digital learning more accessible. One parent's comment captured most of the sentiments shared regarding limited access:

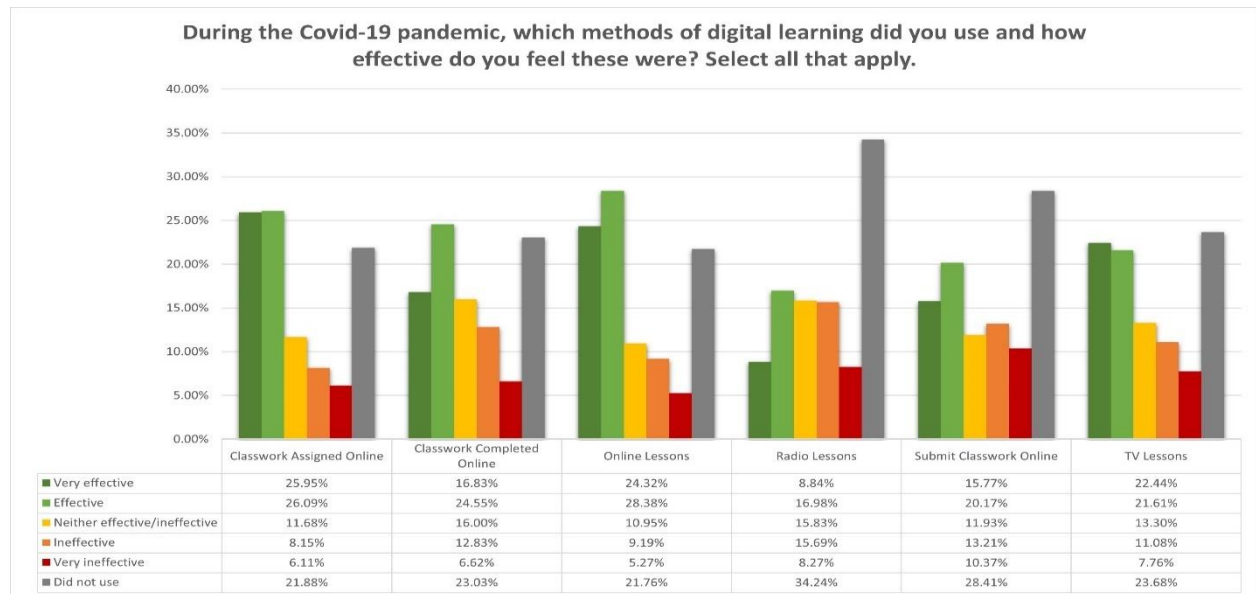
I think there's still much to be done when it comes to digital learning in Cameroon starting from sensitization and even programing. Programs need to be developed that will make students follow up such learning. Network access and dark outs also need to be considered for effective digital learning in Cameroon. Getting mobile data is another obstacle. (Anonymous feedback from a parent/guardian of Cameroonian student).

The staff interviewed and students who took part in the FGD also stressed lack of access to digital learning tools, limited electricity supply and the lack of internet data as the major challenges to digital learning. The school staff emphasized that access to devices and the internet in school is a major challenge as a result of underequipped computer labs vis a vis the high student population. They also complained of lack of ICT knowledge and trained staff. Students in the FGD pointed to similar issues and indicated that they learnt more and had better access to digital devices and the internet through after-school computer training programs. They resorted to using their underperforming phones for learning purposes during the COVID-19 lockdown which to them was a major challenge.

When asked about the measures of distance learning they used during the COVID-19 pandemic and their effectiveness, most students indicated utilizing classwork assigned online or online lessons (see Figure 3.A, below). More than half (52.04%) of students who used classwork assigned online rated it as effective or very effective. 52.70% of students who used online lessons indicated this measure as very effective or effective (there was a slightly stronger tendency to indicate online lessons as very effective). 22.39% of the 134 students who provided open-ended feedback regarding what worked well that should be embedded into future methods of learning indicated WhatsApp as being an effective tool. Similarly, 20.15% of students who provided open-ended feedback also called out TV lessons as working well, despite indicating slightly lower levels of effectiveness with these than classwork assigned online or online lessons (with 44.04% of students rating them as effective or very effective). Despite the effectiveness of online lessons, and assigning and completing work online, only 35.94% of students indicated that submitting classwork online was effective or very effective, and 28.41% stated

that they did not use this distance learning measure. The only measure used less often than submitting classwork online was radio lessons, with 34.24% stating that they did not use it.

Figure 3.A: Student Perception on Effectiveness of e-Learning Tools Used During the Pandemic



As indicated in the open-ended answers and substantiated in the interviews and FGD, reference to classwork assigned online, online lessons and submitting classwork online was linked to the use of WhatsApp learning and other messaging apps. From indications, it was easier for students to receive lectures in the form of notes, messages, and assignments in WhatsApp groups than for them to complete and submit feedback or assignments via the same channels. While WhatsApp was overwhelmingly cited as used for online lessons, other tools such as Zoom, Google Classroom were far-fetched. “We used WhatsApp groups, especially for the examination classes. At the time people did not understand they could do Google classrooms and zoom” an ICT instructor of a government school stated.

Another teacher working for both government and private schools stated that: “In the schools where I teach, the most common measure is that different classrooms or different classes, especially the examination classes created WhatsApp groups where teachers were involved with students, and they had to exchange lessons”. The FGD students also overwhelmingly pointed to the use of WhatsApp learning groups, but also attested having been introduced to other platforms like Zoom and Google Meet through an after-school computer learning program. One female student noted: “The only time I learnt online was during the COVID-19 lockdown through a WhatsApp group where notes and assignments were shared by teachers. I learnt

more about tools for online learning through SODEI's computer program and it is from there I discovered platforms such as Zoom and Google Meet"

WhatsApp learning was also highly criticized for its shortcomings. Staff members indicated several challenges associated with WhatsApp learning which some wouldn't recommend for future use. A government schoolteacher observed that: "WhatsApp is limited because for example students will be unable to download large files. So, you cannot really give a lengthy lecture on a topic like global warming using WhatsApp. It is financially challenging for the students. Secondly it is difficult to evaluate students, there is no mechanism for follow up and some might fraud". A Computer Science teacher at a government school added that: "WhatsApp has limitations, it cannot for example carry a group of more than 10 for a video discussion. In most cases the group will be more than 100, and very difficult for live interaction. But however, we had no other choice, this was the only way we could go about it".

Another teacher pointed out that while students were able to utilize WhatsApp as a learning tool, many of the answers were copy/paste from the internet and didn't sufficiently show that the student had learned. So, effective becomes relative. The tools are effective in that children were able to participate in the educational process, but ineffective in that children weren't actually learning from that method.

WhatsApp learning fell short of fully satisfying the needs of pedagogical continuity due to lack of interaction. It was the preferred platform based on its accessibility and ease of use for social communications than for its pedagogical merits. One of the possible reasons for not adopting other more interactive alternatives could be as Béché (2020) observed, the low level of technological development that characterizes Cameroon's educational system. Béché (2020) indicated that the use of mobile phones and messaging apps for education continuity during the Covid-19 pandemic was faced with issues of distraction, a mix of private conversations and academic exchanges where in some cases the latter was drowned by the former.

However, WhatsApp learning tool served as a lesson on how online/distant learning can be successful if the appropriate measures such as using more interactive platforms are implemented. The mention of tools such as Zoom, and Google Meet indicates that respondents saw these as possible alternatives for interactive online learning or examples of how unique online learning platforms could be designed for Cameroonian students. As indicated, the pandemic also ushered individual initiatives such as *SchoolMobile*, *Brite Academy International*¹⁴, etc. These innovative online learning platforms designed for

¹⁴ For more information visit: <https://briteacademy.net/>

students in Cameroon are examples of measures that could be fine-tuned to meet the specific needs of students in Cameroon.

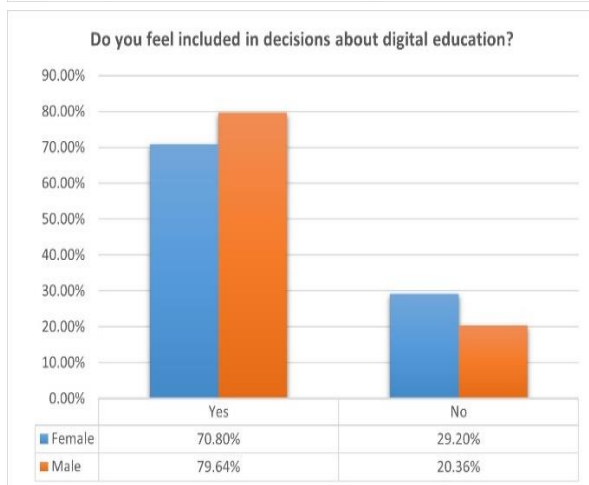
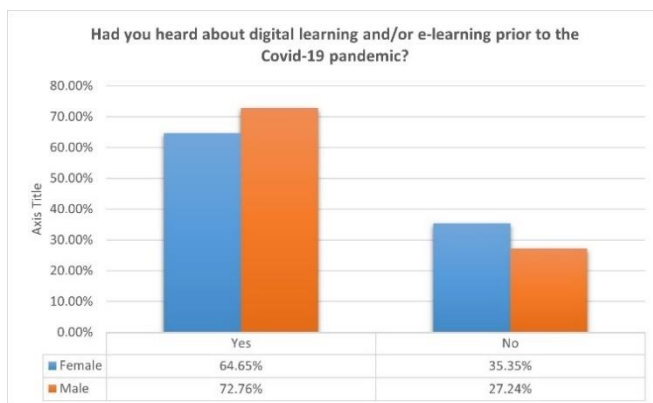
Added to the issues of quality is the problem of inequality in the education milieu which existed prior to the pandemic. Béché (2020), Mbome and Atong (2020), decry the existing educational inequalities which were further exacerbated by the forced and unexpected switch to digital learning methods in Cameroon at the start of the pandemic in the country. If obstacles are apparent in urban settings, it is to be expected that rural settings would suffer an almost complete disruption of their education because schools in urban areas tend to be more equipped than those in rural areas and are more likely to be government-owned (Farinkia, N. and Tambi, A., 2018).

Accompanying the other challenges is the digital divide which also exists between students. A Government High School teacher felt that the impact of the digital learning measures was "positive for a very few, the majority did not even know how to use digital devices, so I cannot put it very much on the positive side."

A significant gender gap was uncovered in the understanding of e-learning between female and male students. Female students were more likely to indicate being unaware of e-learning prior to the pandemic and were more likely to feel excluded from digital tools and digital learning decisions. Male students were more likely to have heard about e-learning prior to the pandemic (72.76%, as compared to 64.65% for female students) and to feel like they were included in decisions regarding digital education (79.64%, as compared to 70.80% for female students) (See Figure 3.B below). Policymakers generally consider the interests of all beneficiaries when making education policies, without usually bearing in mind the importance of gender equality especially when it concerns online/digital learning. Interest in ICT as a means of learning or as a field of study has been gendered from the beginning, where male students were more encouraged to exploit the available opportunities than female students. ICT has been a field traditionally dominated by men hence the lower rates of awareness in female students. The results from our survey may be explained more from the perspective of an inability to use digital tools and platforms for learning due to lack of knowledge and confidence, rather than exclusion. Female interests in digital technologies may have increased in recent years but there are still significant differences between males and females in the use of technology (Vasquez-Cano et al, 2017). However, a careful exploration of the open-ended answers provided by the female students surveyed reveals that; it is not so much unawareness of e-learning, or digital learning, or the fact that technology could be used to facilitate education in general as it is a failure to understand what digital learning would mean to them in their context of learning and if it were possible. A few of them expressed negative sentiments towards the measures of digital learning employed at the start of the

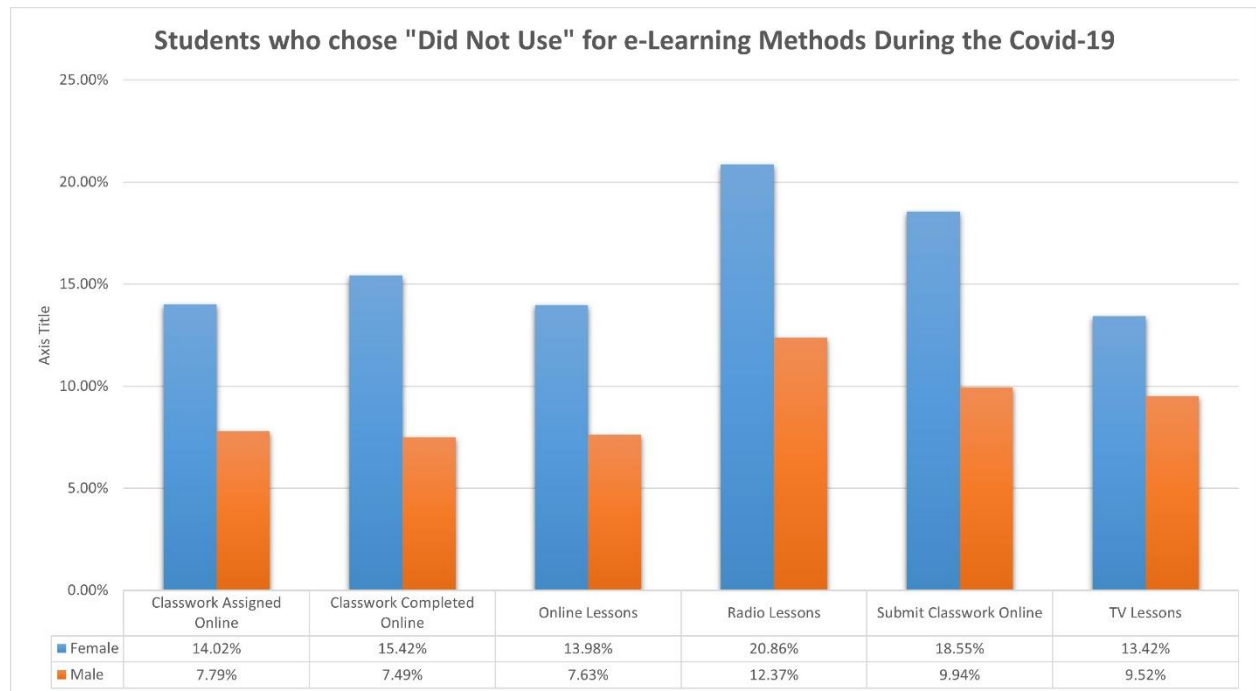
pandemic which included lack of required knowledge, skill, or tools to properly participate in learning at that time. While a lot of them sounded positive and even enthusiastic about digital learning, the underlying doubt that a certain standard of digital learning in Cameroon could be a reality persisted. Notwithstanding, this disparity between responses is still grounded in the notion that computers and information technology are more suitable for boys or men. Everyone should be encouraged to learn and exploit IT resources and opportunities equally

Figure 3.B: Student Perception on Awareness of and Inclusion in Digital Education, by Gender



Further, female students were nearly twice as likely to indicate not using any of the e-learning tools listed in the survey than male students (see Figure 3.C below). regardless of the digital learning method, female students were significantly more likely to indicate not using it during the pandemic. For classwork assigned online, completed online, online lessons, and submitting classwork online, female students were nearly twice as likely to have not used the tool as their male counterparts.

Figure 3.C: Student Indication of "Did Not Use" for each e-Learning Method, by Gender



Female students were slightly less likely to indicate a positive impact to education during the pandemic (48.80% for male students, as compared to 43.94% for female students), yet they were more likely to rate their school’s support of education during the pandemic as good or very good (46.32% for male, and 51.51% for female students). Male students were more likely to positively rate the government’s support of their education during the pandemic (34.34% for male, and 30.82% for female students) and to rate their school’s support as poor or very poor (23.16% for male, and 18.32% for female students). Female students were slightly more likely to opt out of rating the government’s support of their education during the pandemic (21.51% for male, and 24.71% for female students). Finally, female students also expressed lower levels of satisfaction with the quality of their education during the pandemic, with 30.28% indicating satisfied or very satisfied compared to 34.24% of male students.

In their open-ended responses, several female students indicated an inability to access and utilize the e-learning tools, with students stating that e-learning was “not good on my side because did not have the ability to use it”, “very bad for me”, “nothing worked well, not everybody is in possession of digital items.” These student quotes, along with the apparent gap based on gender, suggest that female students feel excluded at most levels of digital learning (access, inclusion in decisions, IT skill and knowledge), with the key difference being their gender.

Conclusion

The COVID-19-prompted school lockdowns revealed the importance of incorporating distance learning and digital education into the current scheme of education in Cameroon. It also exposed the digital access gap that exists between and within countries. While most developed and technologically advanced countries proved better prepared for a distance learning alternative based on their technological advancement, many sub-Saharan African countries struggled with their response. According to Haji et al. (2017), sub-Saharan African countries are still in a premature stage of integrating technologies in the education systems. Cameroon's response exposed the lack of technological development and integration in education, as well as a distinct executable policy to mainstream digital learning into education. The various measures put in place by the government and private initiatives failed to fully support pedagogical continuity. The 'School on TV' adopted as the main alternative proved unsustainable as it faced issues of exclusion of many students as a result of limited power supply and its narrow focus on examination classes (Béché, 2020). Digital learning, the other potential alternative which ended up being more widely used, equally encountered many challenges to its effective implementation.

The results of our survey indicate that both government and private school students, and teachers had mixed feelings regarding the success of distance and digital learning during the pandemic. Students were more dissatisfied with the quality of education, citing lack of access and ineffective learning tools. Unreliable electricity supply posed a major challenge to School on TV. More than 45% of Cameroonians especially in the rural areas do not have access to electricity, hence were de facto excluded from School on TV. Similarly, access to tools including hardware and the internet, the lack of suitable digital learning platforms were major challenges for an effective digital learning alternative. Barriers to distance learning in Cameroon are multifaceted, making it very difficult for most students to navigate through all the challenges. This is further exacerbated by the already prevailing inequalities in education. Students from poor family backgrounds and rural areas would stand no chance to cope with distance learning when their counterparts in urban areas and from well-to-do backgrounds would maybe find it easier but face challenges nonetheless.

The government of Cameroon acknowledges the potential contributions of ICT in education and has made efforts towards policy to ensure the integration of ICT into the education system. However, this is yet to transform into an effective pedagogical and structural framework for digital education in Cameroon. Farinkia et al. (2018) found that there is a lack of effective implementation of policies to ease the mainstreaming of ICT into education, and that there is no regular monitoring and evaluation to know how much access or exposure to practical skills is acquired by learners. Nsolly N. and Charlotte N. (2016) assert that Cameroon like many other sub-Sahara African countries lacks a clear vision and planned strategy for the integration of ICT in education.

The introduction of ICT alongside the presidential grant of multi-media centres in some schools in Cameroon was a move towards the right direction. However, these efforts were put to test during the pandemic and found wanting. The multimedia centres which were initially targeted towards a few select government secondary and high schools in urban towns, excluded most students not attending these schools or based in rural areas. Meanwhile, the existing multimedia centres are poorly equipped, understaffed and can't satisfy the needs of most students, while the expansion process to other schools across the country has been quite slow (Haji et al., 2017). The failure to ensure effective pedagogical continuity during the COVID-19 school lockdowns exposed the insufficiency and unpreparedness of the ICT infrastructure as well as the ineffectiveness of the training measures which according to Nsolly N. and Charlotte N. (2016) are still overwhelmingly theoretical.

One important lesson from the Covid-19 education response in Cameroon is that the development of a more robust distance and digital education system is a necessity; both government and the private sector have a stake in it. This also includes training opportunities for the development of 'techno-pedagogical' skills for teachers and students and the provision of ICT infrastructure. There is certainly space for private sector involvement in the development of digital education technologies as their contribution in advancing digital access in Cameroon is well known. The development of new digital technologies has predominantly been driven by private initiatives and is a perfect case for government and private sector collaboration to advance technology for the benefit of all. In Cameroon, both the government and private sector have been involved in the development and advancement of digital education in the last two decades. However, these measures haven't been robust enough, received little institutional attention and uncoordinated (Beche, 2020). The CIAC project initiated by the NGO ADCOME referenced earlier, which focused on bridging the digital divide mainly in schools working in partnership with the PTA is a good example of how government and private sector partnership can advance digital education. Meanwhile, a unique government sponsored and coordinated nationwide distance/digital education platform will be most crucial to ensure a well-structured and coordinated pedagogical continuity in the event of similar circumstances as the COVID-19 forced school shut-downs. Such a unique platform could be on the basis of state and private sector collaboration to work on developing solutions to improve those such as WhatsApp learning used during the pandemic

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