

AN ASSESSMENT OF SCHOOL PLANT MANAGEMENT AND COVID-19 MITIGATION FOR QUALITY ASSURANCE: EXPERIENCE FROM KWARA STATE

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ABSTRACT

The study assessed school plant management and COVID-19 mitigation for quality assurance in Kwara State public primary schools. In the study, a descriptive survey research design was used. In Kwara State public primary schools, 390 teachers were chosen using a multistage sampling technique. The study used a self-designed and validated questionnaire titled "SFMCCQ" to collect data, and the index's reliability coefficient was 0.82. The results showed that the level of school plant management for COVID-19 mitigation in Kwara State public primary schools was moderate (55.9%); the government's measures to mitigate the spread of the COVID-19 pandemic are the provision of stationed washing hand basins (76.5%); training and re-training support for human resources (61.3%); hand sanitizers (58.2%); school fumigation (52.2%); and the level of compliance with the government's measures. A significant relationship existed between school plant management and COVID-19 mitigation in the schools ($r = 0.921$, $df = 389$, $P < 0.05$). The study concluded that school plant management moderately enhanced COVID-19 pandemic mitigation for quality assurance in the schools. As a result, as nice as the government's measures are, there is a need for the government to develop a more robust contingency plan for COVID-19 mitigation and other emergencies that may disrupt the education system in the near future.

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1. INTRODUCTION

In different countries of the world, including Africa, quality assurance remains a mechanism that cannot be taken for granted across all sectors, most importantly, the education system. It is usually carried out in order to ensure that schools conform to the established standard. It also involves the process of monitoring, assessing, and evaluating all aspects of education activities and communicating the outcome to all concerned with a view to ascertaining whether the expected standard is met. Aside from this, quality assurance is regarded as a mechanism to ensure that the provision of minimum academic standards as contained in the national policy document is enhanced, maintained, and attained (Okojie, 2013). In recent times, observations by the general public have shown that the expected quality assurance seems to have been on the downward slide as continuous monitoring, supervision, and evaluation of teaching and

learning processes in schools is negatively affected as a result of the COVID-19 pandemic outbreak, especially in education (Li et al., 2021; Revilla-Cuesta et al., 2021; Muzaini et al., 2021).

Across the world, the COVID-19 pandemic has become a serious issue of concern barely five years after Ebola. According to the report released at 5:28 pm on November 16, 2021, by the [World Health Organisation \(2020\)](#), there have been more than nearly 253.6 million confirmed cases, 5.1 million deaths, and 230,745,091 recovered. In Africa, there have been more than 6,188,285 confirmed cases, 107,000 deaths, and 405,303 recovered. In addition, in Nigeria, there have been more than 213,321 confirmed cases, 2,973 deaths, and 206,206 recovered. In line with this, the number of confirmed cases of COVID-19 in Kwara State is 3,999, including 64 deaths, and 3700 were recovered. From then till now, this situation has been a major source of concern to all stakeholders because it has put substantial pressure on the government and individuals as they now adapt and change their behaviors towards life situations. Hence, the systematic development of how to mitigate COVID-19 has been frequent public discussions ([Williamson et al., 2020](#); [Green et al., 2021](#); [Turner et al., 2021](#)).

Figure 1 below shows the analysis of the report of confirmed cases of COVID-19, deaths, and those that have recovered in the world, Africa, Nigeria, and Kwara State in particular.

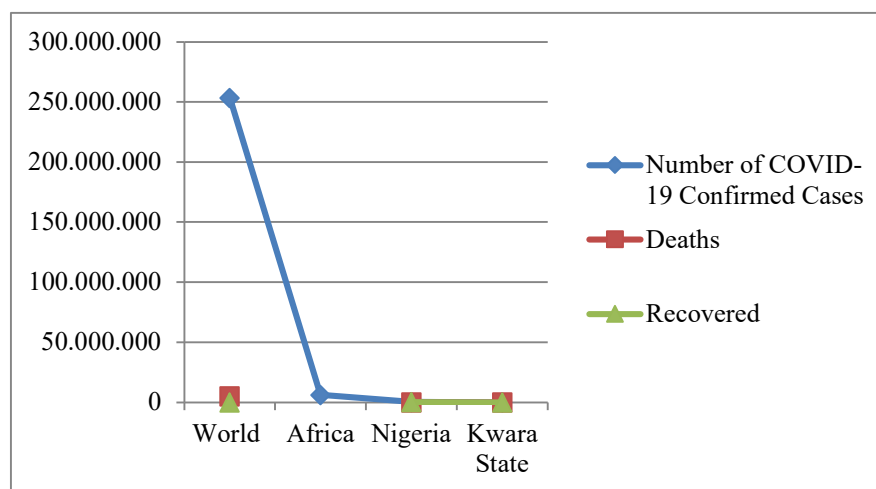


Figure 1. Analysis of the report of confirmed cases of COVID-19

Globally, the emergence of the coronavirus, otherwise known as COVID-19, in most countries, including Africa, has become a great threat to all sectors, including education, health, agriculture, and the social, religious, and economic well-being of people. The threat caused by COVID-19 made the Federal government of Nigeria come up with different measures to combat its spread, including educating the public through all possible channels of communication; developing guidelines for different stakeholders; hygiene measures; strict restrictions on people where there are likely to be overcrowding; and closing or locking down of some institutions, including the education system, whether public or private. Aside from these measures, the use of face masks,

hand washing, physical distancing, cough etiquette, and avoidance of crowded places are recommended.

Considering these measures, the Federal Ministry of Education was given the mandate to close all schools, public or private, on March 27th, 2020 across the 36 states in the country in order to limit the enormous risk posed by the COVID-19 pandemic and its spread to the generality of the people. The situation, however, caused a lot of disruptions to the extent that schools suffered from the purpose for which they were established. In addition, the teachers and students are helpless about how to continue learning in the face of the pandemic. However, different states' Ministries of Education, with no exception of Kwara State, released modalities for radio and TV schooling and internet-based learning for students in public primary and secondary schools in response to government recommendations. But these efforts seem not to be effective due to inadequate resources to adapt or transition to the new learning avenues (Obboh Stephen et al., 2020).

In line with this, stakeholders across the board made due consultations and great strides through pertinent discussions on safe reopening schools to improve access to equitable and quality education, arrest the escalation of risks to children's mental and physical health, and mitigate the long-term impact of the loss of learning associated with the prolonged school closures and lockdowns. The Kwara State government equally gave the Ministry of Education and Human Capital Development to give directives to public and private schools to resume on January 4, 2021. Upon reopening, there are insinuations by the general public from different quarters that the resumption of schools in the state appears to be marked by poor compliance with COVID-19 protocols. In another vein, a decline in students' enrolment seems to be evident as a result of a loss of interest in schooling due to prolonged closures and fear of whether the school plant is properly managed or presumed to be infected with any form of the disease. Therefore, school plant management is central to mitigating the COVID-19 pandemic and enhancing quality assurance.

School plant management is concerned with the effective organization, maintenance, and utilization of semi-permanent and permanent structures in a particular school or system for the achievement of the identified objectives in an educational organization. It is critical and should be taken seriously by administrators due to its importance to the effective and efficient teaching and learning process. This was buttressed by Nwachukwu (2007), who stated that the safest health measures to be taken in schools should be the proper care of buildings, the number of lights, effective ventilation, and attractive furniture. Other significant considerations include ample supplies of safe drinking water; accident-free and clean playfields; adequate storage facilities, especially first aid boxes and other health facilities; and control measures for food hygiene. Hence, the performance of an individual in an educational organization depends on the level of health care and management given to the school plant. Hence, it is on this premise that the researchers assessed school plant management and COVID-19 pandemic mitigation for quality assurance: experience from Kwara State.

The issue of the COVID-19 pandemic has attracted global and international attention (Wang et al., 2020; Mok et al., 2021). As schools resume in Kwara State, teachers in public primary schools face the difficult task of convincing various stakeholders in the education of their ability to manage school plants appropriately to slow or mitigate COVID-19 and ensure quality assurance. Pertinent observations shown by the general public showed that the measures put in place by the government, schools' compliance with those measures, and teachers' awareness about the virus transmission level of school plant management are doubtful and seem not to have been empirically established. The researcher assessed school plant management and COVID-19 mitigation for quality assurance: experience from Kwara State.

Several efforts have been made by different scholars to elucidate what quality assurance is all about. Quality assurance could be described as a mechanism or action taken to view the quality requirements, audit the results of control measures, and analyze the performance of both staff and students in order to ensure that appropriate quality standards and procedures are appropriately implemented in the school. The rationale behind quality assurance in schools is to ensure that planned policies, programs, and activities are driven to meet best practices. Looney and Clemson (2018) asserted that quality assurance consists of the systematic review of educational programs and processes to maintain and improve their quality, equity, and efficiency. Quality assurance mechanisms can be internal or external. The internal mechanisms may include school self-evaluation, staff appraisal, and classroom-based student assessments, while the external mechanisms may include national or regional school evaluations and/or large-scale student assessments (Bejan et al., 2015) In this context, quality assurance can be described as a series of events, affairs, processes, or services that are rendered to ensure that there is proper control, organization, and coordination of school activities to meet the expected quality.

COVID-19 virus could be described as a disease that could be transmitted between people through respiratory droplets (particularly when coughing) or through direct contact with an infected person or indirect contact (touching a surface or object that has been contaminated with respiratory secretions) and then touching one's mouth, nose, or eyes is another route of transmission. In the view of Meng et al. (2020), COVID-19 is perceived as a highly pathogenic viral infection that has the potential to spread frequently and rapidly from person to person through droplets. In addition, the disease is usually spread from person to person through infected air droplets that are released during sneezing or coughing. More so, it can also be transmitted when humans have contact with hands or surfaces that contain the virus and touch their eyes, nose, or mouth with the contaminated hands. Therefore, the most common symptoms of COVID-19 are fever, cough, tiredness, and loss of taste or smell, and the least common symptoms are sore throat, headache, diarrhea, aches, and pains (Taghrir et al., 2020).

Different scholars have defined school plants. For instance, Amanchukwu and Nwachukwu (2015) perceive school plants as all the essential structures, permanent and semi-permanent, as the school site and all the essential structures, permanent and semi-permanent, such as machines, laboratory equipment, and chalkboards, needed for

effective teaching and learning. In addition, [Jimoh et al. \(2017\)](#) posited that a school plant is regarded as the site, building, equipment, and all other available facilities in a school that facilitate the teaching and learning process while at the same time protecting the physical well-being of the occupants. [Elujekwute \(2015\)](#) defined school plants as the school site buildings, equipment, and playground that are designed to facilitate effective teaching and learning and also enhance the physical and emotional needs of staff, students, and the general public. Therefore, effective management of the school plant is necessary in order to make the school pleasant and a comfortable place for the achievement of educational goals and objectives ([Agih, 2015](#)).

School plant management is a continuous process by which the teachers, through the custodial staff, ensure the preservation of the school's permanent and semi-permanent assets in a bid to improve the day-to-day activities of the school system. It also encompasses ways in which school organizations renovate and replace old buildings, outdated facilities, and other learning inputs to create attractive settings that are appropriate and adequate for learning. According to [Ayeni and Adelabu \(2012\)](#), school plant management is the process of planning, organizing, coordinating, and budgeting for the building of the school plant to ensure that service delivery is facilitated and supported in the provision of education by a school. In the view of [Okenwa and Igbo \(2013\)](#), school plant management could be described as a series of processes and services rendered to ensure that all the semi-structured and permanent items are in good condition to achieve the expected quality.

In this regard, school plant management is an essential part of the day-to-day operation of the school ([Musa & Vincen, 2022](#)). Without mincing words, school plant management is imminent and crucial because it fosters and increases the life span of the school plants, reduces operation costs, and motivates a culture of high-quality experience for staff and students. In the view of [Briggs and Walson \(2018\)](#), effective school plant management could enhance their status by keeping them as near their original state as possible, as well as teaching and learning with little or no interference in the teaching and learning process. In other words, if school plants are not managed appropriately to slow down the COVID-19 curve, the purpose for which schools are established will not be realized, especially when quality assurance is taken into account.

[Chersich et al. \(2020\)](#) identified that regular fumigation of the workplace, use of face masks by staff and clients, and visitors' screenings were the effective factors that are used to slow down the transmission of a highly contagious COVID-19 disease among frontline healthcare workers in Africa. The finding is also in agreement with the finding of [Saqlain et al. \(2020\)](#), who conducted a study on knowledge, attitudes, practice, and perceived barriers among healthcare workers regarding COVID-19: A cross-sectional survey from Pakistan, and found that quarantining, fumigation of the environment, ventilation of indoor spaces, training and re-training for health workers, physical or social distancing, hand washing, and covering coughs and sneezes as preventive measures to minimize the risk of COVID-19 transmission among healthcare workers in Pakistan.

When [Zenbaba et al. \(2021\)](#) assessed the compliance towards COVID-19 preventive measures and associated factors among health professionals in selected public hospitals in Southeast Ethiopia, it was found that the overall good compliance and knowledge of health professionals regarding COVID-19 preventive measures were moderate. A study was conducted by [Mustapha \(2020\)](#) on the difficulties faced by teachers in the era of COVID-19 and the management of school facilities in Benue State. A descriptive survey method was used to collect data from 420 respondents. The result showed that daily cleaning and disinfection of frequently touched surfaces, arrangement of students in a manner that they will be at least 2 meters apart, and provision of training for teachers and students about COVID-19. The result further showed that there was a significant relationship between teachers' training and the management of school facilities to enhance quality teaching and learning.

Similarly, [Padidar et al. \(2021\)](#) assessed early COVID-19 compliance and challenges with public health and social prevention measures in the Kingdom of Eswatini using an online survey. It was found that the level of compliance with COVID-19 protocols by the staff in the Kingdom of Eswatini was low. Samuel and Benjamin (2019) compared the influence of school facilities maintenance on the Coronavirus disease (COVID-19) outbreak among public schools in Ekiti State. It was found that there was a significant relationship between school facilities maintenance and the Coronavirus disease (COVID-19) outbreak among public schools in Ekiti State.

Research Questions

Three research questions were raised in this study:

1. What is the level of school plant management for COVID-19 mitigation in Kwara State public primary schools?;
2. What are the measures put in place by the government to mitigate the spread of the COVID-19 pandemic? and
3. What is the level of compliance with the measures put in place by the government to mitigate the spread of the COVID-19 pandemic in schools?

2. METHOD

The research design was a descriptive survey of correlation type that assessed the relationship between school plant management and the COVID-19 pandemic in Kwara State public primary schools. The population for this study consisted of 12,134 teachers from 1,578 public primary schools in Kwara State. The sample was comprised of 390 teachers selected using a multistage sampling technique. First, a proportionate sampling technique was used to select seven LGAs across the three senatorial districts in the state; Kwara Central (2), Kwara South (3), and Kwara North (2), for a total of seven LGAs (38%) out of 16 LGAs in the state.

Thereafter, a stratified random sampling technique was used to select 39 schools across the seven LGAs sampled. A simple random sampling technique was used to select nine teachers across 39 public primary schools in the state, making a total of 390 teachers selected in all. Data collection was through the use of a self-designed 20-item questionnaire titled "School Facilities Management and COVID-19 Questionnaire

(SFMCQ). The SFMCQ was divided into two sections. Section "A" of the SFMCQ focused on the demographic information of the respondents, such as the gender of respondents, qualifications, and years of experience. School facilities management and COVID-19 were measured in Section 'B' of the SFMCQ. The response option was patterned on a 4-point modified Likert scale of 4 points for "Strongly Agree" (SA), 3 points for "Agree" (AG), 2 points for "Disagree" (DG), and 1 point for "Strongly Disagree" (SG), respectively. The instrument used was validated at a reliability coefficient index of 0.82. The data collected was coded and analyzed using frequency counts and percentage scores for the research questions raised, while Pearson's Product Moment Correlation statistic was used for the hypothesis.

3. RESULTS AND DISCUSSION

3.1. What is the level of school plant management for COVID-19 mitigation in Kwara State public primary schools?

In answering the research question on the level of school plant management for COVID-19 mitigation in Kwara State public primary schools, data collected were analyzed using descriptive statistics of frequency counts and percentage scores in Table 1 below.

Table 1. Level of School Plants Management for COVID-19 mitigation

Level School Plants Mangement	Frequency (f)	Percentage (%)
High	120	30.8
Moderate	218	55.9
Low	52	13.3
Total	390	100.0

Source: Field Work, 2021

As shown in Table 1, out of 390 (100.0%) of the teachers that participated in this study, 120(30.8%) reported that their schools had a high level of school plant management; 218(55.9%) had a moderate level of school plant management, and only 52 (13.3%) had a low level of school plant management. Based on this, it can be inferred that the level of school plant management for COVID-19 mitigation in Kwara State public primary schools was moderate. The implication is that most of the public junior secondary schools in Kwara State understand the essence of school plant management for COVID-19 mitigation for quality assurance.

3.2. What are the measures put in place by the government to mitigate the spread of the COVID-19 pandemic in schools?

In answering the research question, the data collected was analyzed using descriptive statistics of frequency counts and percentage scores. The response options of strongly agreed (SG) and agreed (AG) were merged as Agree (AG), while strongly disagreed (SD) and disagreed (DG) were merged as Disagree (DG). Table 2 shows the breakdown of the analysis of the responses of the respondents.

Table 2. Analysis of the measures put in place by the government to mitigate the spread of COVID-19 pandemic in the schools

S/N	Measures put in place by the government to mitigate the spread of COVID-19 pandemic in schools	N	AG	DG
1	Appropriate training and re-training support for human resource	390	239 61.3%	151 38.7%
2	Provision of stationed hand sanitizers for the students, staff, and visitors	390	227 58.2%	163 41.8%
3	Frequent fumigation of schools	390	204 52.3%	186 47.7%
4	The use of a thermometer for testing teachers, students, and visitors before they gain access to the school	390	142 36.4%	248 63.6%
5	Provision of washing hand basin station at the school entrance	390	298 76.5%	92 23.5%
6	Provision and use of face masks and gloves by staff and students	390	203 52.1	187 47.9

Source: Field Data, 2021

In Table 2, out of 390 (100.0%) teachers that participated in this study, 239 (61.3%) indicated appropriate training and re-training support for human resources; 227(58.2%) of the respondents showed provision of hand sanitizers for the students, staff, and visitors; 204 (52.3%) indicated frequent fumigation of schools. Also, 142 (36.4%) of the respondents indicated the use of thermometers for testing teachers, students, and visitors. Equally, 298 (76.5%) showed provision of a stationed washing hand basin station at the school entrance, and 203 (52.1%) indicated the provision and use of face masks and gloves by staff and students.

Based on the analysis, the measures put in place by the government to mitigate the spread of the COVID-19 pandemic in schools are the provision of stationed washing hand basins; training and re-training support for human resources; hand sanitizers; fumigation of schools; and the provision and use of face masks and gloves.

3.3. What is the level of compliance with the measures put in place by the government to mitigate the spread of the COVID-19 pandemic in schools?

Data collected were analyzed using frequency counts and percentage scores in Table 3 to answer the research question on the level of compliance with the measures put in place by the government to mitigate the spread of the COVID-19 pandemic in schools.

Table 3. Summary of the Percentage Analysis of the level of compliance with the measures put in place by the government to mitigate the spread of the COVID-19 pandemic in the schools

Level of Compliance with Government Measures	Frequency (f)	Percentage (%)
High	141	36.2
Moderate	209	53.6
Low	40	10.3
Total	390	100.0

Source: Field Work, 2021

The data in table 3 shows the information on the level of compliance with the measures put in place by the government to mitigate the spread of the COVID-19 pandemic in public junior secondary schools in Kwara State. As shown in the table, out of 390 (100.0%) of the teachers that participated in this study, 141 (36.2%) reported that they had a high level of compliance with the measures put in place by the government to mitigate the spread of the COVID-19 pandemic, 209 (53.8%) had a moderate level of compliance with the measures, and only 40 (10.3%) had a low level of compliance with the measures. Based on this, it can be inferred that the majority of 55.4% of the teachers in public junior secondary schools in Kwara State reported that the level of compliance with the measures put in place by the government to mitigate the spread of the COVID-19 pandemic was moderate. The implication is that both the teachers and visitors to public junior secondary schools in Kwara State are stimulated by the efforts made by the Kwara State government to mitigate the spread of the COVID-19 pandemic for quality assurance.

3.4. Research Hypothesis

Table 4. Summary of Pearson 'r' table showing the relationship between school plants management and covid-19 mitigation in the schools for quality assurance

Variables	N	Mean	Std. Deviation	R	Df	Sig.	Remark
School Plants Management	30	67.61	23.390				
Covid-19 Mitigation	360	34.83	9.058	.921	389	.000	Significant

Source: Field Data, 2021

Table 4 shows the relationship between school plant management and COVID-19 mitigation in schools for quality assurance in Kwara State public primary schools. Considering the data analysed in the table, it was shown that there was a significant relationship between school plant management and COVID-19 mitigation in schools for quality assurance in Kwara State public primary schools ($r=0.921$, $df=389$, $P < 0.05$). The hypothesis was therefore rejected since the significant value is less than 0.05.

3.5. Discussion

The result showed that the level of school plant management for COVID-19 mitigation in Kwara State public primary schools was moderate. The implication is that most of the public junior secondary school teachers in Kwara State were given guidance and understood the essence of school plant management for COVID-19 mitigation for quality assurance. The finding is in line with the finding of [Nwachukwu \(2007\)](#), who found that the safest health measures to be taken in schools should be the proper care of buildings, the number of lights, effective ventilation suitable and attractive furniture. Other significant considerations include ample supplies of safe drinking water; accident-free and clean playfields; adequate storage facilities, especially first aid boxes and other health facilities; and control measures for food hygiene.

The result further showed that the provision of washing hand basins; hand sanitizers; fumigation of schools; and training and re-training support for human resources were the measures put in place by the government to mitigate the spread of the COVID-19 pandemic in schools. The finding is in line with the finding of [Chersich et al. \(2020\)](#), who found that regular fumigation of the workplace, use of face masks by staff and clients, and visitors' screening were the identified effective factors that were used to slow down the transmission of a highly contagious COVID-19 disease among frontline healthcare workers in Africa. The finding is also in agreement with the finding of [Saqlain et al. \(2020\)](#), who conducted a study on knowledge, attitudes, practice, and perceived barriers among healthcare workers regarding COVID-19: A cross-sectional survey from Pakistan, and found that quarantining, fumigation of the environment, ventilation of indoor spaces, training and re-training for health workers, physical or social distancing, hand washing, and covering coughs and sneezes as preventive measures to minimise the risk of COVID-19 transmissions among healthcare workers in Pakistan.

The result showed that the level of compliance with the measures put in place by the government to mitigate the spread of the COVID-19 pandemic in schools was moderate. The finding aligns with the finding of [Zenbaba et al. \(2021\)](#), which assessed the compliance towards COVID-19 preventive measures and associated factors among health professionals in selected public hospitals in Southeast Ethiopia. They found that the overall good compliance and knowledge of health professionals regarding COVID-19 preventive measures were moderate. The finding is in contrast with the finding of [Padidar et al. \(2021\)](#) that assessed early COVID-19 compliance with and challenges with public health and social prevention measures in the Kingdom of Eswatini, using an online survey, and found that the level of compliance with COVID-19 protocols by the staff in the Kingdom of Eswatini was low.

The result showed a significant relationship existed between school plant management and COVID-19 mitigation for quality assurance in the schools ($r = 0.921$, $df = 388$, $P < 0.05$). The finding is in line with the finding of Samuel and Benjamin (2019), who found that there was a significant relationship between school facilities maintenance and the Coronavirus disease (COVID-19) outbreak among public schools in Ekiti State. The finding is also in agreement with the finding of [Mustapha \(2012\)](#),

who found a significant relationship between teachers' training and the management of school facilities to enhance quality teaching and learning in Benue State public and private secondary schools.

4. CONCLUSION

The current study assessed school plant management and COVID-19 mitigation for quality assurance in Kwara State public primary schools. Considering the findings of this study, it can be concluded that school plant management moderately enhanced COVID-19 pandemic mitigation for quality assurance in Kwara State public primary schools.

Recommendations

The following recommendations were made based on the findings of the study:

1. The government should endeavour to strengthen its efforts to sensitise both the teachers and community members where schools are located on the need to use the thermometer for testing of visitors as well as the use of face masks by all in the school. If this is done, it can help to mitigate the spread of COVID-19.
2. The government should prepare a scripted lesson for students in the case of an emergency.
3. Governments should engage the school principals and stakeholders in the community where schools are located about changes in the workplace and make them aware of their responsibilities to provide a safe working environment for the teachers and students during the pandemic.
4. For the Kwara State government to achieve more success in the mitigation of COVID-19, there is a need for the government to come up with a more robust contingency plan for COVID-19 mitigation and other emergencies that could likely disrupt the education system in the near future.

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