

Covid 19 Lockdown And Mathematics Education Using Online Platform: Overcoming The Challenges

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Abstract

With the onset of COVID-19 pandemic, educators around the globe have had to adapt their teaching to accommodate stay-at-home mandates. The prevalence of the pandemic, have caused a transition from the traditional face-to-face method of teaching to an online format in a short period of time. Such a transition poses unique challenges for science and mathematics instruction. This paper identified the challenges associated with the teaching of mathematics using online platform during the COVID 19 lockdown periods. The concept of mathematics, mathematics education, COVID 19 and lockdown were discussed. The paper also outlined how the identified challenges were controlled.

Keywords: COVID 19, Lockdown, Mathematics Education, Barriers, Online Platform, Challenges.

INTRODUCTION

Mathematics is a precursor of scientific discoveries and inventions. It is described as the touchstone of wit and whetstone of intelligence that aids reasoning. Odili (1) Citing Kline described mathematics as man's most extensive and most profound effort to achieve precise and effective thinking and its accomplishment measures the capacity of the human mind. To Odili (1), mathematics represents the superb and sublime product of reason as well as the upper limits of what one hopes to attain in all rational domain. The supremacy of Mathematics is extolled by the National Policy of Education (2) where it stated that Mathematics should be made a core subject in the primary and secondary education levels. Kurumeh and Chianson (3) opined that for an individual to possess higher order skills and cope with the demands of the present day workforce and navigate complex world, he/she will have a good knowledge of Mathematics. Mathematics Education is the field of study that acquaints learners with certain basic knowledge, skill and attitude needed for future work in science, engineering and other related field.

COVID 19 is the infectious disease caused by the most recently discovered corona virus. This new virus and disease were unknown before the outbreak began in Wuhan, China in December, 2019. The most common symptoms of COVID 19 are fever, tiredness, dry cough and difficulty in breathing. It is highly contagious. Lockdown refers to restrictions of movement of humans within a particular area, with the aim of halting the spread of the pandemic (4). In Nigeria, the Federal Government introduced lockdown in Abuja, Lagos, and Ogun State, for two weeks starting from March 29, 2020 and extended it

again for another two weeks. State governors who had confirmed cases of COVID 19 in their respective states of which Rivers state was a part also declared a lockdown. During this time, businesses and offices were closed down and people were compelled to stay at home.

Following the importance of mathematics and the need for students to keep learning amidst the lockdown, Good Report Home Teaching Services (of which the authors are consultants to) introduced the use of online platform via whatsapps to teach our clients in Port Harcourt Metropolis and environs. The choice of whatsapps was due to the fact that it is the cheapest, easy to use and the most used social media platform in the state (5). It has features such as video calls, instant messaging calling at very low rates that can enhance learning when effectively utilized (6). Therefore this paper identified challenges associated with the use of online platform in teaching and learning mathematics during COVID 19 lockdown.

Significance of the study

With the onset of COVID-19 pandemic, educators around the globe have had to adapt their teaching to accommodate stay-at-home mandates. The prevalence of the pandemic, have caused a transition from the traditional face-to-face method of teaching to an online format in a short period of time. Such a transition poses unique challenges for science and mathematics instruction delivery. This paper will be of immense benefit to students, teachers, educational administrators and curriculum planners. The paper showcased challenges associated with the use of whatsapp to deliver mathematics instruction during the pandemic and how the identified barriers were controlled.

Scope of the study

The study was carried out in Port Harcourt city and it covered only activities that took place between teachers and learners participating in an online class session. The online platform used was whatsapp.

Identified Challenges

The following challenges were identified.

- ✓ **Divided attention:** The tone of new messages always drew the attention of learners from the original task, thereby creating divided attention to the learner.
- ✓ **Arousing the interest of the learners:** The task of arousing and sustaining the interest of learners during the learning period was a challenge, since the process was done in virtual space.
- ✓ **Presentation of instructions:** The traditional ways of presenting lesson content was not suitable with this process since every activity was done in virtual space and this was a challenge.
- ✓ **Exchange of information between the teacher and learners:** under this issue of exchange of information, 4 points were identified, viz-a-viz;
 - i. Use of informal language by students
 - ii. Message flooding
 - iii. Lack of some mathematical symbols in whatsapp
 - iv. Number of participants in a session
- ✓ **Evaluation:** the task of effectively evaluating the learners after every session was a major challenge.

Overcoming the Challenges

The following are the steps and practices taken to overcome the challenges identified

- i. The tone prompting of the app was silenced, during lesson period this was checked by the learners' parents/guardian
- ii. To arouse the interest of the learners, the specific objectives and details of the content to be covered were sent to the learners ahead of time and they were compelled to read them. Then the teacher uses the video feature of the application to introduce the lesson aptly and gets feedback from the learners on their readiness before proceeding to the presentation stage.
- iii. The ability to read and comprehend is a major factor that determines the ease with which learners will understand in using online teaching and learning platform. To enhance presentation of instruction, the first part of the objective is sent to the learners and they are allowed to read for few minutes. After which a video showing the teacher explaining the content and using the instructional aides will be sent. The teacher gives the learner time to

assimilate the content in the video before proceeding to solve examples using the same approach. For instance, when teaching chord theorem using the online platform, the teacher sends the first content which gives the definition of chord and a diagram showing the chord on the circle. After which a video (usually short) showing the teacher explaining the content using a model of a circle will be sent. Students are allowed to comment before proceeding.

- iv. To achieve effective exchange of information in this platform the learners were penalized and dissuaded from using informal language. Since the application does not have most of the mathematics symbols the learners were encourage writing on paper, snap before sending to the teacher. The numbers of participants per session were reduced to 5 to further control the issue of message flooding.
- v. To achieve effective evaluation, the teacher sends a picture of the correct solution, and a video showing how the solution was arrived at. This was done to clarify any area of the correction that was not clear to the learners.
- vi. The contents were written in simple and clear language and the videos were usually short and addressed specific issues. The general content delivered in a session was small (2 objectives) and the time spent was approximately one hour.

CONCLUSION

This study has identified the challenges associated with the use of online platform for teaching and learning of mathematics during this COVID 19 lockdown. The study also outlined how the identified barriers were controlled for enhanced instruction delivery.

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