



Mathematics Lecturers' Adaption to Online Teaching in Response to COVID-19

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Undergraduate courses at Nigerian universities primarily rely on conventional, face-to-face classroom teaching methods (Lawal, 2020). The global outbreak of COVID-19 greatly impacted educational systems worldwide, including in Nigeria, where institutions were compelled to close in response to the pandemic (Lawal, 2020). This closure necessitated a shift to online delivery methods, utilising various approaches to internet-based learning. With mathematics and mathematics education lecturers likely to have views about how their subjects should be taught, it was of interest to examine the impact of this change on their teaching.

This study, which comes from the first author's ongoing PhD research project, adopted a mixed-methods approach (Creswell & Clark, 2017) to obtain in-depth information about the lecturers' online teaching experiences. The study was exploratory, and both qualitative and quantitative data were collected to explore lecturers' experiences with teaching mathematics education courses online. Three key themes were generated through thematic analysis of data obtained by interviewing ten mathematics and mathematics education lecturers at a Nigerian university, which impacted their experiences with online teaching during the pandemic:

- online teaching engagement, which includes lecturers' approaches to teaching;
- perspectives about online mathematics teaching, which includes their beliefs about the nature of mathematics and mathematics teaching; and
- knowledge and use of technology for teaching, which includes their familiarity with online teaching tools and infrastructural challenges.

The lecturers discussed issues surrounding internet access, power outages, and under-resourced online teaching facilities. Lecturers revealed having to use personal devices and funding their own internet access and power, but they were also supported by the university with software and the use of the ICT centre if needed. Lecturers' beliefs about the nature of mathematics had an impact on their views about online teaching. Lecturers also varied in their capacity to use online tools, in some cases influenced by their prior experiences. The quality of lecturer-student interactions was enhanced with *WhatsApp* due to its flexibility even with poor internet access, alongside virtual boards, writing pads, and other online tools, such as *Zoom* and *Google Meet*. Finally, recorded lectures and a blended approach were recommended to complement the continued utilisation of online teaching and learning processes.

References

- Creswell, J. W., & Clark, V. L. P. (2017). *Designing and conducting mixed methods research*. Sage Publications.
- Lawal, I. (2020). Why Nigeria must invest in open, distance learning by Prof Jegede. *The Guardian*. <https://guardian.ng/features/why-nigeria-must-invest-in-open-distance-learning-by-prof-jegade/>