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Rethinking Virtual Classroom: A Pragmatic Way of Ensuring Social Distancing in a Large Class in the Post Covid-19 Era

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Abstract
This paper presents virtual classroom as a solution to the challenge of social distancing in a large class in our education system in a post COVID-19 era. General courses in higher institution are normally offered by many students and in most cases are faced with inadequate spaces that can accommodate the whole students thus making it difficult to observe the social distancing rule for controlling the Covid-19. In this study efforts were made to discuss the problems associated with large classes leading to an in-depth comparison between traditional classroom and virtual classroom and the benefits of virtual classroom highlighted. In the light of the above, this paper centered on provoking the action of government, management, school administrators and other stakeholders in educational system towards rethinking instructional delivery vis-a-vis virtual classroom for a better performance and safety of the life of students in higher institutions. The paper recommends among others, the provision of enabling environment in tertiary institutions for the actualization of safe and sound academic environment.

Keywords: Classroom, Virtual Learning, Large Class, Social Distancing, Post COVID-19 Era.

Introduction
Traditional classroom, which can also be referred to as physical or face-to-face classroom, is a place where teachers meet their students for teaching and learning process using instructional materials such as chalkboard/whiteboard, chart, etc (Singh, 2023). This type of classroom requires the physical presence of both the students and instructors before learning can take place, making it necessary for all the students to gather together at a time thereby encourages clustering of students in a place. The

interaction between the teacher and the learners improved greatly when the use of computer and Internet technology was introduced to the classroom and make real life example, illustrations and other resources accessible by the teacher to drive home the lesson with better pedagogy (Ukwungwu & Oyedapo, 2012). A technologically enhanced classroom can be described as a classroom where Internet facilities, computer system, projector, smart board, public address system, etc. are available and utilized for presentation, collaboration, virtual learning and lecture documentation. Such a classroom enhanced by technology is expected to be a good example of modern classroom as it is obtainable in most develop nation but developing nations are still struggling with how they will upgrade their classroom to modern classroom when COVID-19 struck and paralyzed economy and education system for almost six (6) months.

Covid-19 as it was popularly called is a corona virus that was declared by the World Health Organization, 2020 as a pandemic that affected the entire world which made the issue of physical distancing became very necessary in any gathering. Crowds were totally avoided and educational system became a victim since school system is made of students from different families and backgrounds. The developed nations were able to adjust quickly and switch over to virtual classroom but developing nations lost almost one academic session to lockdown saga declared by federal government to control the spread of the pandemic. The setback suffered by developing countries during this period is largely due to lack of facilities for virtual classroom and newness of its concept to African (Mishra, Gupta & Shree, 2020).

A virtual classroom can be described as an Internet-based learning platform that provides full participation for distance learner just like face-to-face classroom. (The Learning & Performance Institute, 2020). This means that learners can remotely hook up to the classroom using Internet enabled devices and enjoy the class fully even better than somebody in the conventional classroom. In virtual classroom, demonstration, discussion and lecture stations are conducted in a synchronous environment which allows the learner and the mentor to take part in one-on-one and group discussion irrespective of the class size. Virtual classroom has many great features that make it students centered. It is cost-effective, flexible, easily accessible, collaborative and experimental. Participants can contact each other and discuss at the same time due to the option provided by the virtual learning environment and there is no concern about appearance, gender, age, race, job or any barrier which may block real life communication. The attendance to lecture is automatically taken by the system even though students that miss the lecture can be given opportunity to go through the documentary (Ananthasayanam, Rajathi, & Tamilselvi, 2009).

The ability of virtual platforms to keep adequate record of lectures and to effectively manage a large class made it a very suitable tool for teaching large classes in higher institutions. Large class size is one of the problems in the educational sector that developing nations have been grappling with; simply because they lack adequate facilities for its effective mangement (Cuseo, 2010; Ayeni & Olowe, 2016). Poor classroom management, ineffective students'

control, and many other problems have been associated with large physical classroom which virtual classroom can take good care of.

Maanvizhi, Jaiswal, Narayanan & Jain (2020) predicted that virtual classroom is going to be in high trend in the upcoming days and soon will be replacing the traditional mode of education which involves the use of physical classroom as internet dependent learning is growing rapidly in almost all schools and colleges. This assertion, though in agreement with Falloon (2012) and Ihama, Eguasa, (2021)**,** may be true of most developed countries but may be far from the truth for underdeveloped nations which are still battling with many challenges of providing enabling environment for such platform in their schools and colleges (Oyedapo & Ibeme, 2022). COVID-19 is expected to have taught the leaders in this country an unforgettable lesson that should have led to serious planning and preparation to avoid such ugly experience in the education system in the nearest future but it appears much lessons have not been learnt from the previous experience.

Federal College of Education, Eha-Amufu for example has made several efforts to explore the benefit of virtual classroom. All academic staff in the college were introduced to Google classroom in 2020. In 2023 a capacity building workshop ("Train the trainers" workshop) was organized for some selected staff on the management of virtual classroom platform built by National Commission for Colleges of Education (NCCE) for selected colleges in Nigeria, which Federal College of Education, Eha-Amufu happens to be one of them. It is necessary to assess the fruit yielded by all these efforts especially in controlling large classes by evaluating the readiness for online learning in this country. This paper therefore calls for a sober reflection on the extent of the preparedness, in this nation, should a similar experience of COVID-19 resurface. Hence, the need to rethink our adequate preparation for effective use of virtual classroom as a lasting solution to ensuring social distancing especially in a large class in our educational system by answering the following questions:

1) What are the problems associated with large classes in College of Education in the post COVID-19 era?
2) How can virtual classroom help in solving the problem associated with large classes in Colleges of Education?

Problems associated with large classes

Large class can be seen as a relative term in post covid-19 era which means that if more than 40 students are in the class that have capacity to contain only 30 students, it is a large class. Consequently, any class where the number of the students is much more than the capacity of the class used is also considered as a large class in this paper. Ayeni & Olowe (2016) might have also put capacity of classroom in developing country into consideration before he concluded that large classes in higher institution are usually considered to be those lectures that have greater or equal to sixty (60) students in attendance in a class. Large classes are expected to have numerous support systems, such as public address system, projector, and so on, to help all the students in the class benefit maximally. Many of the responses of

respondents agreed totally with (Shamim & Kuchah, 2016) who opine that large classes in higher institutions of learning particularly in developing nations lack the necessary facilities required for effective teaching and learning to happen. To complicate the issue of large classes, the curriculum in our higher institutions is designed in such a way that they include general courses which are seeing as compulsory courses for all the students in the institution. In Colleges of Education for example there are courses in the school of education called general courses such as general studies courses and education courses which every student must pass before their graduation, therefore making the population of the class to become large with class size over one thousand students. It may be practically impossible to get facilities that will accommodate such number of students and still observe social distancing in compliance with the new normal brought by the emergence of COVID-19. Therefore, the post COVID-19 era is faced with a serious challenge of observing social distancing in such a large class. Thus, the more students are in a class the more the risk of spreading the deadly virus if there is any epidemic on campus.

Besides, the result of this study is similar to the result a study conducted by Cuseo,(2010), it was discovered that large classes play a major role in poor academic performance of many first year students in Colleges. Cuseo further argues that a growing body of research points to the value of undergraduate learning environments that set high expectations, promote active and interactive learning, and give students personal validation and frequent feedback on their work. These settings and practices are especially beneficial for beginners as they make the transition to College. Yet in most universities, introductory courses or classes that fulfill general education requirements often carry enrollment of hundreds of students. These large-class settings have historically been heavily lecture-centered, requiring minimal student engagement and expecting little more than memorization of terms and concepts as evidence of student learning (Shamim, & Kuchah, 2016). The sheer size and anonymity of large classes seem to militate against the very elements that promote students' involvement and intellectual development, learning, and success (Wang & Calvano, 2022). Lack of concentration, absence from class and poor performance of many students in the large class seem to be tolerated since individual close monitoring is impossible.

The theoretical arguments against large classes have been reinforced by empirical evidence, that shows ten disturbing issues associated with large classes: (1) increased reliance on the lecture method of instruction, (2) reduced student involvement in the learning process, (3) reduced class interaction and feedback, (4) reduced student assimilation and meditation inside the classroom, (5) reduced attainment of course objectives, course assignments, and course-related learning strategies used by students outside the classroom, (6) lower levels of academic performance, (7) reduced overall course satisfaction with the learning experience, (8) lower evaluations of course instructions, (9) Reduce instructor's control over the class and (10) leading to lack of interest in teaching and learning the course (Ayeni & Olowe, 2016; Yelkpieri, Namale, Esia-Donkoh, Ofosu-Dwamena, 2012; Maloney, 2020; Etim, Etim, & Blizard, 2020; Wang & Calvano, 2022).

All these challenges of large classes are pointers to the need for a better way of addressing the problem hence virtual classroom is presented in this paper as an innovative means of addressing these challenges.

Understanding Virtual Classroom

A virtual classroom is also known as online classroom. It is a learning environment that is situated in the cloud via internet. It can be viewed as a cost effective solution which permits students to interact with instructors and classmates in real time from any part of the world. It is a process in which students and instructors are actively involved in creating and carrying out learning activities together like group discussion, joint projects, and debates, sharing of solutions to homework problems by emails, bulletin boards, chat rooms and conferences (Dutta & Bhakta, 2017).

Many characteristics of the traditional classroom, such as face to face, scheduled time and a particular venue, have been carried over into the virtual classroom. The teacher can see all the students and interact with them one on one in virtual classroom if the lesson is scheduled to hold at particular time and platform known to the students just as it is obtainable in traditional classroom. Besides, both traditional classroom and virtual classroom make use of similar learning theory, curriculum design and pedagogy. In normal classroom- teachers and learners are present in a similar way to that of virtual classroom; in the traditional classroom teachers use blackboards for any diagram and figures and interact with students just as it is applicable to a virtual classroom environment where whiteboard is present to draw the necessary things and live chat option is given to ask any question, regular tests are conducted to evaluate the students and feedback given regarding them (Sufeng and Runjuan, 2013).

Virtual classroom possesses some of the characteristics of the internet which traditional classroom does not have. For example, there is no limit of time, place, distance, and it is more convenient for both the students and the teachers to get more information from the internet (Ananthasayanam, Rajathi & Tamilselvi, 2009). There are two common forms of virtual classroom namely synchronous virtual classroom and asynchronous virtual classroom.

In asynchronous virtual learning learners access their education at their own pace and at their convenient time. It is time independent which in turn is sought to control the order of activities. All over the period of learning, one can access the available material from online platform, there is no restriction in downloading the study material as it is available on the site. In this platform the direct contact with other participants and the mentor is voluntary as the learner can learn at their own preferable time by selecting from reading resources, video lessons, sessions and discussions. In addition, the interaction between the candidates is made in form of personal messages and mails which form asynchronous form of virtual learning (The Learning & Performance Institute, 2020). This is very good when used as flip classroom and has its own numerous advantages but the emphasis of this paper is on synchronous virtual classroom because synchronous virtual classroom is a real time learning environment. It can

be totally online learning and it can also be blended learning which supports the connection of normal classroom to virtual classroom.

Synchronous virtual learning takes place in live online conference mode. It includes online seminars, online communication and web conferencing schemes. Virtual classroom platforms make adequate provision for collaborative learning facility, which can be viewed as integral component of teaching and learning platform as well as two-way communication with many interactive features for instant feedback at the disposal of both the teacher and the students (Elfeky & Elbyaly 2023). What makes this mode of education to gain popularity among students is its comfortability and affordability (Ihama and Eguasa, 2021). Students that are not residing on campus may find it cheaper to connect to the class from home than to sacrifice time, money and other inconvenience for the class. In other words virtual classroom saves time and money, and reduces the risk of being exposed to danger such as accidents or kidnapping.

Moreover, the size of the class does not impose any additional responsibility on the teacher or even the learners. The students join the class on their own using their individual device without any form of disturbance to the class. The system keeps attendance, records the lesson, marks the quiz, and generates report immediately after the lecture.

Features of virtual classrooms

Virtual classroom is treasured for its great features that make learning productive and interactive (Elfeky & Elbyaly 2023). Some of these features that are very common in virtual classroom are listed below:

Live audio: The audio facility enables communication between the facilitator and the learners. Audio is available in most web conferencing software either through the Internet—Voice Over Internet Protocol (VOIP) or by using a telephone connection. Public address system can be used to amplify the voice if many of the learners are listening via any of the connected device. To avoid noise background it usually a good practice to mute all the learners when the lesson is ongoing but questions, responses or observations can be made when giving permission to un-mute.

Video support: video help the learner to enjoy the lesson as if it is real life or normal classroom. The participants can see each other's face and enjoy both non-verbal and verbal communication teaching skill of their instructor by using webcams. Video features can be disabled for the platform to display the profile picture of such person if any of the participants is experiencing poor network or low bandwidth. The Learning & Performance Institute (2020) argues that to minimize the challenges of low bandwidth or poor network it is better to use video for opening session of the class, and for the question and answer sessions. Avoiding the use of live video throughout the session may also help the learner to concentrate on the lesson since using live video has a tendency of distracting the learners and take their attention away from the slides.

Video/audio recording: Most virtual classroom platform make provision for recording of class activities for later use. The recording is normally done by the host of the platform used and it can be shared for revision purposes or kept in the library for future reference. Absentees can also watch the recorded video later while the facilitator use the same to assess how the session went and what could have been improved. When the sound/voice only is recorded without any video, it is saved as audio file while video recording is saved as video file.

Screen Sharing option: This allows the instructors to share lecture note or any form of lecture materials like diagrams, learning videos with the learners. The document is expected to be inform of a slide which can be uploaded using share screen button and navigate through using mouse, keyboard or pointer. Sharing of Microsoft Office documents, PDFs and various media files are supported by all most all virtual classroom platform such as Zoom, Google meet, Microsoft team etc.

Whiteboard: Whiteboard is a substitute to chalk board in traditional method. It is the tool that is used to draw graphics and figures in virtual classroom. The whiteboard has tools that allow both the learners and trainers to add text, draw pictures and highlight items using the marker pen tool, therefore making it possible to post ideas, either by entering text or drawing, and it is an excellent way of getting learners working at the same time and engaged with the lesson.

***"Raise hand"* option**: if any student wants to ask any question or respond to questions asked by lecturer, he raises hand electronically by pressing 'raise hand' button and leaving it on until the leader calls his/her name. This feature has contributed largely to the orderliness and discipline enjoy in virtual classroom since the attention of the teacher will be drawn to the student without distracting the class.

Live chat supports: This feature provides text based chats which can be used by all the participants. Private messaging between learner and presenter enables learners to signal difficulties to the facilitator without disrupting the session. It is possible to chat the facilitator privately or chat publicly for all the participants to view the chat. Instructor can use chat feature to sustain the attention of the students by asking them to respond to his question individually through chat.

Attendance tracking: Used to track attendance, monitor participant or keep record for administrative purposes. One of the major advantages of virtual classroom is the ability to accommodate large number of learners without the participants feeling it in any form (Saba Maanvizhi, Jaiswal, Narayanan & Jain, 2020). It is only the attendance or the counter that can reveal the largeness of a class.

Break out room: a general class can be grouped according to their department or area for group assignment or group project using break out room. This feature allows the teacher to create separate breakout rooms for group exercises in such a way that each group will have access to all of the major facilities of the main room, such as chat, audio, whiteboards and document share etc.

The need to adopt virtual classroom

According to Oyedapo and Ibeme, (2022), higher institutions in Nigeria are not yet prepared for the sustainability of our education system in the post COVID-19 era. In Federal College

of Education, Eha-Amufu that was used as case study for example, Information and Communication Technology (ICT) gadgets required for virtual classroom and for the sustainability of our education system are grossly inadequate. Epileptic power supply in the country has continued to post a very serious challenge to implementation of virtual classroom. No lecturer or department uses Google classroom, Google meet, Zoom or any other web-based virtual classroom to teach again after lock down in FCE, Eha-Amufu as at the time of the study. Some researchers have identified the problem of some lecturers as unwillingness to develop digital teaching skill (Bigné, Badenes, Ruiz, & Andreu, 2018; Elfeky & Elbyaly, 2023). Most students accepted that they have smart phone and access to internet probably through the phone but staff may not be ready to sacrifice their data to teach students.

According to Anekwe (2017), students in higher institutions prefer virtual classroom and perform better when taught with it. It is therefore necessary for the government and school management to encourage both staff and students to use virtual classroom by providing enabling environment for technology to strive in the institutions. This is possible if and only if it is seen as a priority for achieving a sustainability of our educational system. The lecturers and students in our institution should not show "I don't care attitude" in this matter but they are expected to take the lead by sacrificing everything possible to support the move. "Where there is a will, there is a way"; let us learn from the experience of year 2020 total lockdown and rethink a workable strategy for acquiring adequate facilities for virtual learning.

Conclusion

In conclusion, every effort should be made to ensure the observation of all the precautions suggested by World Health Organization to control the spread of COVID-19 pandemic in this post COVID-19 era. The issue of social distancing should be taken serious in our educational system most especially in the large classes such as in general courses in all our higher institution. Virtual classrooms have been identified as a powerful tool that can help in ensuring social distancing in large classes since some of the students will prefer the option of connecting to the class from home. There is need to rethink the teaching and learning strategies that will make virtual classroom work effectively in our school system. Availability of steady Internet services and power supply in the school premises may serve as a starting point. Educational system should encourage blended learning.

Recommendations

Lecture halls usually use for large class should be equipped with a good sound system and other ICT facilities such as interactive white board, projector, visualizer and necessary cables needed for streaming the lecture to virtual audience by the school management. Internet services should be freely available for the use of both staff and students on campus; this can be achieved by combine effort of government, non-government organization and Internet service providers. Competent electricians or ICT personnel should be available for the maintenance and operation of the gadgets installed in order to guarantee their durability and

sustained the usability. Social distancing should be factored in during initial design of any building in the system.

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