

## **Virtual Teaching, Learning and Sustainable Development in Nigeria: Issues, Challenges and Prospects**

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### **Abstract**

*Education, irrespective of the way it is acquired, underlies the development of all nations of the world. Online strategies of acquiring education, such as virtual or e-learning, which are the twenty-first Century approaches to education delivery; are particularly important in countries bedeviled with staff union strikes, like Nigeria. Depending on the cause(s) of the strikes, learning can continue online between tutors and students. Virtual teaching and learning take place in virtual classrooms, where tutors and students may not face one another. Teaching and learning, including tests, assignments and other classroom activities, are conducted online, where computer and internet facilities are available. This is practised in developed countries and can also be practiced in developing countries like Nigeria, provided education can be well funded, corruption reduced and virtual classrooms can be established. If Nigeria is to participate in virtual teaching and learning, education must be funded generously, develop the political will to embark on virtual education programmes, provide computers and internet services all over the country and train teachers that will handle the programme adequately. Unless and until the steps listed above are taken, it may be difficult, if not impossible, to embark on virtual teaching and learning in Nigeria.*

**Keywords:** Virtual learning, Teaching, Sustainable Development, Issues, Challenges, Prospects.



## **Introduction**

Education plays a very significant role in the life of people, whether in developed, developing or less developed countries of the world. Education remains a veritable tool for the development of individuals, communities and nations of the world. It is only through teaching and learning that the acquisition of knowledge, skills, attitudes, habits and all manner of competencies can be acquired (Eze, 2017; Jhingan, 2011; Mole, 2011). According to Saljo (2000) learning and knowledge are key factors linked to people perceptions of economic and social development. Education may be acquired through all manner of methodologies, including the traditional and modern methods of teaching and learning.

This is because, many individuals learn in different ways (Maison, 2017). There are visual learners (those that have to see what is taught before they can understand), auditory learners (those that learn through listening or who must hear before they can understand) as well as those who must feel or touch and practice with, before they can understand. It is for this reason that learning tools and methodologies have continued to be revised and improved upon, to be able to make things easy for every learner. Today, apart from the traditional methods of teaching and learning which take place at homes, in classrooms or lecture halls, where teachers have a face-to-face contact with students, new methods of teaching, which depend on computers, the internet and other modern devices and which do not require that teachers interact with students on a face-to-face basis are also in use, particularly in developed countries of the world. This can be very helpful in countries that are bedeviled with staff union strikes like Nigeria.

## **Objective of the Article**

The main objective of this article is to explore the issues, challenges and prospects of virtual teaching and learning (which is a modern method) and how Nigeria can utilise the prospects or recommendations in it for the purpose of embarking on it and thus ensure the sustainable development of the nation.

## **Conceptual Clarifications**

This section of the paper presents the clarifications or explanations of the key concepts discussed in this article and the contexts in which they are



used. Such concepts include virtual teaching, virtual learning and sustainable development. Since it is difficult to discuss virtual teaching and learning without reference to modern technological and internet developments, the concept of e-learning will also be explained in the light of its relationship with virtual teaching and learning.

### ***Virtual Learning***

Virtual Learning is a learning experience that is enhanced through utilising computers and/or the internet both outside and inside the facilities of the educational organisation. The instruction most commonly takes place in an online environment (Researchgate, 2018a). Virtual Learning uses computers software, the internet or both to deliver instruction to students. This minimises the need for teachers and students to share a classroom. Instruction is presented by a teacher but that teacher is not usually, physically present with the students.

### ***Virtual Teaching***

Virtual Teaching is a teaching experience in which the teaching activities are carried out online, whereby the teacher and learners are physically separated in terms of place, time or both. This type of teaching takes place in a virtual classroom, which is a teaching and learning environment where participants can interact, communicate, view and discuss presentations and even engage with learning resources while working in groups, all in an online setting.

### ***Virtual Classroom***

A virtual classroom is an online learning environment that allows for live interactions between the tutor and the learners as they are participating in learning activities. The most common tools found in a virtual classroom include facilities for video conferencing, online whiteboard for real time collaboration, instant messaging tools, participatory controls and breakout rooms (Researchgate, 2018a).

### ***Sustainable Development***

The concept of sustainable development has been defined by Daku, Zachi and Lato (2016); as the combination of social development, economic development and environmental protection. They contended that there is



a strong linkage between sustainable development and higher education generally and university education in particular. The thrust of this article is to explore in what ways virtual learning can contribute to the development of total persons, who can contribute to sustainable Nigerian national development, not just through the development of their skills, knowledge and the morality they may acquire, but also through what Tracy and Chee (2003) called the twelve (12) disciplines of leadership. To these authors, leaders that can facilitate sustainable development must be disciplined in the areas of leadership excellence, clarity, self-control and self-responsibility, character, competence, competitiveness, creativity, courage, caring about people, change management, concentration and personal excellence. It is the anticipation of this, that virtual learning, if and when properly handled in excellent learning environments, can and should go some way in raising Nigerian leaders with the disciplined attributes leaders should possess, as itemised by Tracy and Chee (2003). According to Wikipedia, the free encyclopedia, sustainable development is the organizing principle for meeting human development goals while simultaneously sustaining the ability of natural systems to provide the natural resources and ecosystem services based upon which the economy and society depend. This implies that as resources are expended in this generation, steps are taken not to jeopardise the future generational opportunities.

Steps should be taken by government to infuse updated and relevant subjects and topics into the national education curriculum, in order to produce graduates that can facilitate the execution of sustainable social, economic, political and cultural development of Nigeria.

### ***E-learning***

E-learning has been described or defined variously by different authors. Fry (2010) defined E-learning as a delivery of training and education through networked interactivity and distribution of technologies. Ojwang (2012) saw it as the intentional use of networked information and communications technology in teaching and learning. He added that e-learning comprised a lot more than online learning and that it included virtual learning, distributed learning, networked or web-based learning. It could use networked or stand-alone computers and other electronic devices. To Khan (2005), e-learning utilizes different technologies and



methods, such as Computer-Based Training (CBT), Internet-Based Training (IBT), Web-Based Instruction (WBI), Advanced Distributed Learning (ADL), Distance Learning (DL), Online Learning (OL), Mobile Learning (ML) as well as Learning Management System (LMS) (Dondo, Okpe and Gbough, 2019).

### ***Virtual Learning and E-learning***

From the definitions of both virtual and e-learning proffered in the preceding paragraphs, it has become very clear that virtual and e-learning have so many things in common and that they inter-relate very closely. The methodologies adopted for both virtual and e-learning are almost all the same. Both of them depend, largely, on computers, the internet and other technological devices. It is, therefore, clear from the definitions that both virtual and e-learning interdepend and rely on each other for the success of their operations.

### **Issues in Implementation of Virtual Learning**

Virtual learning has largely, been accepted and is in use, especially in developed countries of the world. Virtual, like e-learning, is among the latest waves of the 21<sup>st</sup> Century education strategies, and it is believed to be having a fair show around the world, despite the challenges posed for both instructors and students. Implementing virtual learning strategy demands that instructors put in intensive work and time to design the instructions. Students who will benefit from such instructions; need to equip themselves with lots of technical proficiency to be able to decode the course materials (Kumar, 2015). Kumar identified five challenges faced by students in virtual as well as e-learning classes. The issues include adaptability struggle, technical issues, level of computer literacy, time management and self-motivation. These challenges are explained in the following ways:

***Adaptability Struggle:*** It has to do with switching from traditional classroom and face-to-face instructor training to computer-based training in a virtual classroom. This makes learning experience entirely different for students. Many times, students resistance to change does not allow them to adapt to online learning environment. It takes them time to get accustomed to Course Management System (CMS) and the methods of



computer-based education. Students with traditional mindset tend to find it difficult to adapt to the modern online learning strategy.

- **Technical Issues:** Such issues relate to strong internet connections which online courses require. These are largely absent, especially in developing countries, and where this happens, students fail to catch-up with their virtual classmates. Weak internet monitors make it difficult for the affected students to follow the course management system (CMS) and therefore, their learning experience becomes problematic. Those of them who live off-campus will find it difficult to keep in tune with the technical requirements of their chosen course.
- **Computer Literacy:** It is a very common problem among students and even tutors, especially in developing countries. Many students cannot operate, even such basic computer programmes as Microsoft Word and PowerPoint and therefore, are not able to handle their files. Also, many of them cannot fix basic computer problems due to lack of basic knowledge in this area. But technological proficiency is a must for all students and tutors for following online courses. It enables students and teachers to manage their assignments and courseware in an organised manner and without struggling.
- **Time Management:** It is critical to both tutors and students of virtual and e-learning. Online courses are intensive in nature and require efficient time management. Students must develop time management habits to be able to succeed in their programmes. Most of the time, adults prefer web-based learning programmes because of their place and time flexibility, unfortunately they rarely have the time to take the courses due to their various everyday commitments. Students who wish to succeed in online studies need to develop regular schedule planning habits and be willing to even employ the use of reminders for their courses and assignments.
- **Self-motivation:** It is a virtual and e-learning requirement that students must cultivate to remain on their online programmes. Students need to find the motivation to follow the new educational



trends and to also properly equip themselves for future challenges in e-learning. Self-motivation will assist them to persist in their search for knowledge irrespective of difficulties that many confront them.

There is the issue of how to establish a virtual classroom environment. A virtual classroom is an online environment that allows for live interaction between the tutor and the learners as they are participating in learning activities. It is a shared online environment, where both tutor and students undertake learning activities. Such environments require internet service, a computer or smartphone, a microphone and a software tool for hosting live stream events and other technological information and communications equipment (Samba, 2019). Also, Ozgur, (2015) gave a list of the equipment to use in a virtual classroom as including web-based equipment such as functioning computer, a good internet connection, a vision conference software, a microphone and a webcam. However, the issue of poor power supply, poor or non-existent internet services in Nigeria, makes it rather difficult for the country to embark on virtual teaching and learning at all levels of education. This is so because the countrys budgetary allocation to education is usually below 10% of the total national budget against the 26% prescribed by UNESCO in 2011.

### **Benefits of Virtual Learning**

The Researchgate organisation (2018b) identified five benefits of virtual classroom teaching and learning over the traditional classroom and methodologies. They include increased convenience, schedule flexibility, knowledge retention, immediate feedback, increased participation and engagement of participants during the lesson. They also claimed that virtual learning environment enhances the combination of structure and freedom. While the environment provides the structure, both teachers and students are afforded the flexibility to act as and when they are ready and willing. Students and teachers have access to coursework from anywhere and anytime that suits them. Students can do their assignments even when they are out of town or on business trip.



***Combination of Structure and Freedom***

Many online degree programmes are built on a structure of weekly assignments and due dates that you must meet. This happens whether the student requires to take online tests, posting home-works, papers and projects, watching a faculty presentation or participating in a discussion with fellow classmates. However, within the programmes structure, students have the freedom to choose the test times to participate, which will fit properly into their schedules.

***Effective Time Management***

Online education provides a welcome environment for working adults, who need to balance work and family with the demands of school work. Workers save hours every week, not having to commute back and forth to classes on campus. Going back to school as a worker, sharpens ones time management skills because one has to be disciplined enough to find time to study at home.

***Expanded World View***

Virtual learning programmes, can attract students from all parts of the world and this will bring different perspectives from diverse cultures. Students are afforded the opportunities to work on group projects and collaborate with international classmates. Insights into other business cultures, attitudes and problem-solving approaches are gained and these can inform ones future approaches to problems and opportunities.

***Asynchronous Discussions with Classmates***

The student has the opportunity to attend class from anywhere. Student can participate in discussions, add his/her posts, submit his/her lessons and it usually works perfectly, with perfect internet facilities. In a virtual classroom, discussions do not cease just because the time is up. Students have the opportunity of formulating their ideas, even when they are out for their runs, and posting them when they return home for their colleagues to see and benefit from.

***Immediate Feedback on Tests***

Virtual teaching and learning situations or environments do not delay feedback to students and teachers. Students usually take their tests online



and these are scored immediately they submit their work. Thus they can quickly see where they did well and where they did not, and therefore, need improvement.

### ***Sharpened Digital Skills***

As students who engage in virtual learning increase their knowledge and skills in their areas of study, they also improve on their digital skills on the most sophisticated online learning technology. They gain greater confidence and become more highly productive in using online tools, such as online tests, drop boxes for homework, collaboration tools, e-mail communications to faculty and fellow students or classmates and video presentations by faculty.

### **Challenges of Virtual Teaching and Learning**

Among the disadvantages or challenges of virtual teaching and learning, according to Redlaunch (2011), Otuka (2010) and Onyegagbu and Eze (2011) includes the following:

- (a) online student feedback is limited. A student is told that he or she has done or has not done well in a test, but he or she is left to find out what is wrong. The teacher is not immediately around to explain what has gone wrong.
- (b) virtual education, based on e-learning, can cause social isolation. Whereas the traditional classroom environment encourages group study, where students interact with one another on a face-to-face basis, e-learning can take place with the student, working alone, in an isolated environment.
- (c) e-learning requires strong self-motivation and time management skills, which many students may not have and these can jeopardise their efforts.
- (d) online students run the risk of lack of communicational skills development because they do not study in company of other students. They lack the opportunity to communicate with other people and this affects their communicational skills.
- (e) the task of preventing cheating by students during online assessments by teachers is very complicated. Whereas, in a traditional classroom situation, teachers have the opportunity of facing students directly and preventing them from cheating during



tests, in virtual learning environments, students are far away from teachers and cannot be supervised directly. They may, therefore, cheat during tests and assignments, without the teacher detecting easily and immediately.

- (f) Nigerian educational institutions lack the technological, infrastructural and internet facilities that virtual learning and/or teaching can thrive on. Teachers and students do not enjoy the benefit of the supply of computers, laptops, overhead projectors and a host of other gadgets that can support the creation of virtual learning environments.
- (g) Education is generally very poorly funded in Nigeria. In a number of cases, not only is education poorly funded, even the little fund allocated to education is poorly managed, misapplied and/or outrightly embezzled. This in a way affects the running of virtual classes.
- (h) Power or electricity supply in Nigeria remains epileptic and is interrupted at will and therefore, can hardly support a sustainable virtual learning programme.
- (i) Nigeria lacks the required skilled manpower to install and manage any sustainable virtual teaching and learning programme. Many lecturers or tutors do not have the required computer literacy and knowledge they need to be able to teach students in virtual study environments and government appears reluctant to send them to training programmes that can improve their knowledge and skills in computer studies.
- (j) There is a general lack of political will to embark on virtual learning by leaders in Nigeria. This makes them reluctant to set up virtual classrooms that are well equipped and can facilitate the teaching and learning by tutors and students.

### **Conclusion**

Education, everywhere in the world and at all times, underlies the development of individuals, communities, economies and all facets of natural life and this appears to explain why the methods of its delivery have kept evolving and improving over time. From the traditional methods of education delivery, which encouraged face-to-face interactions between teachers, students and among themselves, we now have modern



methods of education delivery, such as virtual and e-learning strategies, in which teachers do not need to interact in a face-to-face situation, with their students. These 21<sup>st</sup> century strategies of education delivery, of course, have their benefits and challenges. In countries like Nigeria, where staff and student union strikes are the order of the day, embracing the modern methods of education delivery would certainly be an added advantage in their effort to establish and entrench sustainable national development.

From available records, these 21<sup>st</sup> century methods of education delivery, have been adopted by developed countries of the world, where internet services, computers and other technological devices required by the modern methods abound. Power supply is hardly ever interrupted. These, unfortunately, are not yet so well established in developing countries, like Nigeria. This, most likely, is why many developing countries are finding it difficult to embark on using the modern methods of education delivery. Since high quality education underlies development, including sustainable development, then developing countries must strive to embark on adopting the modern methods, which can deliver education to learners even in times of staff and/or student union strikes. All that developing nations (among them, Nigeria) need to do is to develop the requisite political will and decide to improve on the funding of education.

Virtual education is expensive, since it thrives on the internet, computers and several other technological devices. Nigeria, particularly, must improve on its power supply to sustain the internet and computer services, required by virtual and e-learning programmes. If Nigeria cannot develop the political will, improve on education funding, procure the internet and computer services as well as improve on her supply of electricity to the nation, she may as well forget about embarking on virtual education delivery strategies for now.

### **Way Forward**

Having regard to the challenges and benefits of virtual education, it is hereby recommended:

- Policy makers and the government should adopt the attitudes of being willing to participate in it. Such attitudes can inform the political will to engage in it and that, in turn, can lead to the



government changing its mind about the budgetary allocation to education every year.

- Virtual teaching and learning, which can only take place in virtual learning environments, is cost-intensive and requires generous financial allocation to education in Nigerias annual budgets. If funding of education improves, and given the requisite political will, virtual classrooms will be provided with all the necessary equipment that facilitate virtual teaching and learning in Nigeria.
- Virtual teaching and learning can only take place if and when teachers are given requisite knowledge and skills in computer education. Teachers should be exposed to all training programmes — such as in-service training, study leave with pay, workshops, seminars and other short-term training programmes, so that they can improve on their knowledge and skills of the computer and information and communications technology (ICT). Students should also be exposed to basic computer knowledge and skills so that they can cope with lessons that their teachers may deliver in their virtual classrooms.
- Government and parents should assist in motivating the teachers and students in order to sustain their interest in virtual teaching and learning. Steps should be taken by government to infuse updated and relevant subjects and topics into the national educational curriculum, in order to produce graduates that can facilitate the execution of sustainable social, economic, political and cultural development of Nigeria.

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