THE INTERNATIONAL JOURNAL OF HUMANITIES & SOCIAL STUDIES

Strategizing Techniques for Coping with the Challenges of Blended Teaching and Learning in Teacher Preparation Institutions in a Post-COVID-19 Nigeria

Dr. Moshood Babatunde Lawal

Chief Lecturer, Department of Social Studies,
Adeniran Ogunsanya College of Education, Oto/Ijanikin, Lagos, Nigeria

Alausa, Jamiu A.

Lecturer, Department of Social Studies,
Adeniran Ogunsanya College of Education, Oto/Ijanikin, Lagos, Nigeria

Galtimari, Rukaiya Gaji

Programme Officer, Department of Academic Programmes,
National Commission for Colleges of Education, Abuja, Nigeria

Abstract:

This paper examines the concept of blended teaching and learning as an intervention for coping with the challenges created by COVID-19 pandemic and recommended the strategy for effective teacher preparation in Nigeria. Specifically, it attempted to do learning as a comparatively analysis of the efficacy of blended teaching and face to face teaching in relation to the current teacher preparation strategies in the Nigerian Colleges of Education. Strategies for successful use of blended teaching and learning by the different stakeholders involved in teacher preparation institutions under the new normal were highlighted and discussed.

Keywords: *Blended teaching and learning, teacher preparation, institutions, challenges, coping strategies and techniques, Post-COVID 19 and Nigeria*

1. Introduction

The Corona Virus (COVID-19) pandemic which was first recognized and reported in Wuhan, Hubei Province, China on the 31st December 2019, before it rapidly spread across the world, has become so deadly between that time and the year 2021. The effect of this pandemic on the global educational system became so intense to the extent that all schools across the globe were shut. Reimers (2021) reported that 'one year into the COVID-19 pandemic, close to half the world's students are still affected by partial or full school closures, and over 100 million additional children will fall below the minimum proficiency level in reading as a result of the health crises.'

One of the major changes to the student experience resulting from this phenomenon is that lots of lectures, classes and seminars have moved online (Gareth Hughes 2021). The implication of this is the evolution of a 'new normal' practice in instructional delivery in educational institutions across the globe. Badmus (2020) remarked that in response to this global phenomenon, most tertiary institutions have resulted to the use of open educational applications, which include platforms that educational institutions and their teachers could use to reach students remotely in a way to contain the disruption. The 'new normal' in the education sector came in form of methodological paradigm shift from the traditional face-to-face classroom interaction to virtual or online lesson presentation, with an urgent demand from teachers and students for flexibility, adaptability and the need for technological skills.

At the teacher preparation level, particularly College of Education in Nigeria, concerted efforts were put in place to achieve this goal and respond to the demands of this 'new normal' in instructional delivery. Nevertheless, a conscious review of the way this is being practised could raise some serious concerns in Nigeria, particularly if we recall that it has never been an integral component of the practice embraced by the teachers in their respective instructional delivery modes. Only very few of them were using virtual teaching and learning modes before the coming of COVID-19 pandemic. Hence, the suggestion that teachers should begin to consider the combination of virtual/online teaching with the traditional face-to-face classroom teaching in the name of blended teaching. On a cautionary note, however, we are not sure of the practising teachers' level of competence in the use of this new strategy. This is because the use of a blended teaching approach would normally require that some processes for professional development of teachers in terms of equipping them with the needed skills to meet this new market demand was never a major component of their training module.

It is therefore the concern of this paper to find out the possible challenges which are capable of constraining the handling of the new approach and adversely affect the productivity of the teachers of teacher preparation institutions, e.g.,

Colleges of Education, so charged with the implementation of blended teaching as part of the new normal. This is with the sole aim of offering necessary suggestions on how they can effectively handle blended teaching without necessarily neglecting social connectedness for effective learning.

2. Blended Teaching versus the Traditional Face-to-Face Teaching

A discourse of this nature will normally require some attempt to establish the quality of the approach being presented for acceptability. Hence, the need for conceptual clarifications and a comparison of the two approaches; blended teaching and the traditional face-to-face teaching. Simply described, blended teaching is the teaching that uses two or more different teaching and learning methods.

Blended teaching integrates face-to-face and online instruction. It involves the combination of face-to-face teaching and learning with online teaching and learning. It most commonly refers to a combination of face-to-face learning with internet-based online learning. According to Dangwal (2017) blended teaching and learning provides students with opportunity to gain advantage of the experts of the course content they are studying as they can easily watch lectures by renowned experts from different fields available on youtubes'.

With blended learning, students from anywhere in the world, can access relevant, high-quality instruction free. This does not replace the teacher though, but rather creates an opportunity to incorporate the blended learning environment into the classroom (Rozeboom, 2017).

This approach to teaching can take on many different looks from classroom to classroom; however, there is always an element of online learning combined with offline activities. The Christensen Institute talks about four models that almost all blended learning in the classrooms can be grouped into. The first is called the rotation model. Here, students 'rotate on a fixed schedule or at teacher's discretion between learning modalities, at least one of which is online learning' (Christensen Institute, 2017). The second model is the Flex model where learning is primarily done online, but there are also times where students work offline.

The Institute remarked that the Flex model allows students to 'move on an individually customized, fluid schedule among learning modalities. The teacher of record is on-site, and students learn mostly on the brick-and-mortar campus, except for any homework assignments. The teacher of record or other adults provide face-to-face support on a flexible and adaptive as needed basis through activities such as small-group instruction, group projects, and individual tutoring. Some implementations have substantial face-to-face support, whereas others have minimal support' (Christensen Institute, 2017).

The third type of blended learning described by the Institute is an A La Carte model which is a course done entirely online that is a part of the student's schedule at a school where he or she has other classes that are face-to-face. One of the ways that teachers are attempting to meet the needs of their students is by implementing a blended classroom approach. This is not like full-time online learning, because the student's entire schedule is not done online (Christensen Institute, 2017).

The last blended learning type is called the Enriched Virtual model where students are required to meet for classes, but a majority of their learning and practice is done online. The work does not have to be completed in the classroom however and students do not meet every day together (Christensen Institute, 2017).

The traditional face-to-face (F2F) learning has been described by Top Hat (2021) as an instructional method which allows course content and learning material to be taught in person to a group of students in form of a live interaction between a learner and an instructor. In face-to-face learning, students are held accountable for their progress at the class's specific meeting date and time. Face-to-face learning ensures a better understanding and recollection of lesson content and gives class members a chance to bond with one another. Learners benefit from a greater level of interaction with their fellow students as well.

Face-to-face learning is learning in class that relies on the presence of teaching lecturers to teach in class. On face-to-face learning, students are involved in spontaneous verbal communication in a permanent physical environment [1]. Face to face learning or also often referred to as traditional learning, is learning that is centered on lecturers who are a source of knowledge, and students have little involvement.

According to SUNY (2020) the traditional Face-to-Face (F2F) teaching and learning (also known as in-person) focuses on several elements, including lectures, capstones, team projects, labs, studios, and so forth. It is a teaching conducted synchronously in a physical learning environment (utilizing appropriate safety measures), which means that 'traditionally,' the students are in the same place simultaneously. Face to face teaching and learning is usually carried out with lecture, presentation, discussion methods.

So, in practice, face to face learning is also carried out with various kinds of learning methods which are all carried out in the classroom. Face-to-face learning is therefore, the more traditional way of instruction, where students and teachers attend an in-person session at the same time. The instructor leads the class, and usually, students are passively learning.

Unlike the F2F teaching and learning, blended learning is learning that uses two or more different learning methods, a combination of combinations such as: combining face-to-face learning with online learning, combining online learning with access to trainers or faculty members or combining simulation with structured learning [3]. With blended teaching and learning the ability to work with small groups and struggling students is made possible. Having the freedom to work with the students that are truly struggling really helps differentiate in the classroom and gives them the attention they need to succeed. It also creates opportunity for students to collaborate, learn from each other, and really take ownership of their learning.

In spite of these differences, research findings have confirmed that blended learning has been shown to yield either no statistical difference or slightly higher results in achievement measures when compared to traditional face-to-face instruction in studies of undergraduate nursing learners (Johnson et al., 2010; Salamonson and Lantz, 2005; Blissitt, 2016; McCutcheon et al., 2015; Hsu and Hsieh, 2011; Li et al., 2019). These findings are consistent with the results of a recent meta-analysis by Li et al. (2019) of studies comparing blended to face-to-face learning in undergraduate nursing, with results showing a positive impact of BL on knowledge and student satisfaction, yet no significant difference in relation to skills development (Li et al., 2019). However, combining face-to-face teaching while utilizing online learning resources to supplement instruction can make learning more successful.

Contrary to these findings, Nigel Smith (2013) compared blended teaching with traditional face-to-face tuition, and found that students have been reportedly more satisfied with F2F and have viewed their learning more positively, but conversely have also been observed to prefer face-to-face instruction and even resent technology-mediated learning (Noble, 2002). The persistence of individual differences in familiarity and enjoyment of technology-mediated learning has also been noted (Meyer, 2003). Amongst teachers, other researchers have documented a mixture of positive and negative experiences (Christianson, Tiene, & Luft, 2002; G. G. Smith, Ferguson, & Caris, 2001).

3. An X-ray of Present Teacher Preparation Strategy in Nigeria Colleges of Education

Teacher education in Nigeria is offered in Colleges of Education and University Faculties of Education. The statutory responsibilities for teacher education in the country are vested in colleges of education (COE), Institutes of Education, Polytechnics and Nigeria teachers Institute (NTI) (by distance learning). At the College of Education level, the Nigeria Certificate in Education (NCE) is offered as a sub-degree but highly qualitative professional diploma in teacher education obtained after a three-year full-time programme in a College of Education. Conventional teaching procedures are the major mode of curriculum delivery of teacher education in Nigeria.

Adeosun (2014) reported that the teacher training curriculum in the country does not fully acknowledge the new age environment in schools and classrooms in terms of constructivist learning, learner-centred instructions and integrating technology into the processes of teaching and learning. Furthermore, she was of the opinion that there is not a sufficiently strong link between the schools' curriculum and the teacher education curriculum. This was confirmed by Osuji and Taiwo (2019) as they remarked that teacher education in Nigeria has not been rosy and that justifies the discrepancies between the desired objectives and the output of the programme.

Adeosun (2014) also presented a summary of the reports of Education Sector analysis, National Teacher Education Policy, Education Support Programme in Nigeria, and Input Visit, which reported among others a lack of congruity between teacher education curriculum and the new age teaching and learning environment which is characterized by constructivist learning, learner-centered instructions and integrating technology into the pedagogical process. There is equally a noticed gap between the curriculum taught to teacher trainees and the actual teaching experience and environment they are exposed to in schools. Cherechi et al. (2018) while trying to carry out a quick x-ray of the present teacher preparation strategy in the College of Education system in Nigeria observed that classroom processes in the primary and pre-primary schools where NCE holders are teaching and an assessment of NCE student-teachers on teaching practice do not present the NCE holders of today as those having the required competence. This has been further compounded by curriculum content delivery policy somersault which has reduced the volume of topics available for the learners at the basic level of education, thereby restricting the application of the knowledge and skills acquired during preparation/training by the preservice teachers in the classroom on graduation.

Cherechiet. al. (2018) also observed that most colleges of education in Nigeria can only provide the theoretical aspect of professional courses such as computer science, Business Education among others. In most cases, students group themselves to make use of the available computers and other technological apparatus hence they are not sufficient. A very high percentage of the preservice teacher trainers are not ICT complaint which unfortunately runs contrary to tenets of the 21st Century teaching profession. The Nigerian Teacher Education can therefore be said to be lacking in the area of application of information and communication technology.

The problem of underfunding of higher education is also noted to have nearly marred teacher education in Nigeria. It poses a great threat to the quality of teachers produced for the society. The effect of the under-funding varies from one institution to another. Cherechiet. al. (2018) supports this by observing that education in general has 'received afternoon beating and neglect of poor funding'. This is manifested in the decline in yearly budgetary provisions for education. It is pathetic to note that poor funding of education is a stumbling block in meeting institutional requirements for training of teachers. So, where we expect funds to be made available for the improvement of teacher preparation, this challenge becomes a major constraint to such effort.

4. Challenges associated with the Integration of Blended Teaching and Learning into Teacher Preparation Programmes

Effective integration of blended teaching and learning into teacher preparation programmes in a country like Nigeria can be seriously constrained by some factors which will go a long way to challenge the success of such integration efforts. This is because the sudden shift to online learning has turned education on its head, and in many cases, it's the students who are having the toughest time. Regardless of the level of education, learning online is a lot different than learning in the classroom.

This can however be tricky as it can be hard to concentrate and stay engaged for long periods of time over a video call and it might be harder to clarify the things you find hard to understand if the students' lecturers or peers are not

physically present. One of the most disappointing things about teaching virtually therefore for teachers is not getting to know his students and not being able to recognize them individually as he/she was used to. Some of the possible challenges will include:

4.1. Demand for More Preparation Time

A teacher trainer trying to integrate blended teaching and learning into a teacher education class may likely need to work twice as hard because at times it can take longer time to prepare online lectures. Such trainer might end up spending longer hours preparing for a class that will have taken him/her only about 20 minutes. Distractions during class times and some technical mishaps have equally become common for such teacher trainers as well. Again, there is the possibility of teacher trainers missing their students who they have been building relationships with – some of them have been at the same school doing field experiences or other work for more than just the first two months of the semester.

4.2. Reliable Internet Access

In the digital age, it is hard to imagine any household without access to the internet, but the International Communication Union (ITU, 2020) reported that in Africa, only 28 percent of households in urban areas had access to the Internet at home, but that was still 4.5 times as high as the percentage in rural areas, which stood at 6.3 percent whereas in the other regions of the world, household Internet access in urban areas stood between 70 and 88 percent. Limited, to no access to the internet can therefore be one of the biggest challenges for preservice teacher trainers and the trainees, in a situation where they have to migrate to both F2F and online learning as a result of the effect of COVID-19 pandemic.

ITU (2020) also reported another issue compounding this preceding challenge by revealing that while virtually all urban areas in the world are covered by a mobile broadband network, many gaps subsist in rural areas. In Least Developed Countries (LDCs), 17 percent of the rural population has no mobile coverage at all, and 19 percent of the rural population is only covered by a 2G network. In LDCs like Nigeria, the overall share of people using the Internet is half of the corresponding share for young people, which itself is only 38 percent of all youth.

4.3. Inadequate Number of Computers

Information and Communication Technology facilities are presently inadequate in Nigeria. Blended classroom approach requires the use of computer in teaching and learning, accessing information through the internet, e-library, in teaching. All these identified good ideas are not the problem, the problem is that the essential facilities needed for practice and implementation are not there for teachers and students use. If a teacher's school does not possess adequate computers and fast internet connection, the implementation of blended teaching and learning is not feasible.

Finding reliable internet may therefore be the least of a student's worries if they do not have a device to connect with in the first place. Even if they do, they may have to share with friends or classmates who are also attending school online or who have been forced to start working from home. A survey conducted by ITU (2020) reported that although only 17% of the households in Africa has computer, but since computers are no longer the main gateway to the Internet, across the board the percentage of households with a computer is still smaller than the percentage of households with Internet access. This is further compounded by the low-level access to smart phones by preservice teachers.

4.4. Effect of Growth in International Bandwidth Usage

International bandwidth usage growth accelerated in 2020. As networks around the world were put to the test during the COVID-19 pandemic, increased internet traffic first caused a temporary drop in speed in many countries, but international bandwidth usage is estimated to have grown globally by 38 percent, exceeding the growth rate of the previous year by 6 percentage points (ITU, 2020). The highest international bandwidth use occurs in Asia and the Pacific, with over 300 Terabit per second, followed by Europe (over 150 Tbit/s) and the Americas (over 140 Tbit/s).

Growth of international bandwidth usage in developing countries outstripped growth in developed countries. This was due to the rate at which internet use was embraced for social media and teaching/learning purposes. Virtually every education system; primary, secondary and tertiary education system had no choice but to embrace virtual tools for interaction and communication. The resultant effect has been poor internet service due to unending network congestion.

4.5. Low Digital Literacy and Competency Skills of Teachers and Learners

Low ICT skill has remained a barrier to meaningful participation in a digital society that is calling for the integration of blended teaching and learning into the nation's education system. ITU (2020) reported that in 40% of the countries of the world for which data are available, less than 40% of individuals were said to have reported having carried out one of the activities that compose basic skills in the last three months, e.g., sending an e-mail with an attachment. It was also reported that, in 70% of the countries, less than 40% of individuals had done one of the standard skills components, such as creating an electronic presentation with any presentation software. The implication and effect of these on the teacher trainer and his/her trainees can best be imagined.

One survey that asked 340 teachers about their experience with the abrupt shift to online teaching showed that 60% of the respondents had no experience with online teaching. They faced difficulties with a range of activities that required a good level of digital competency, such as making video materials, delivering live online lessons, and interacting with students online.

4.6. Affordability of ICT Services

Average prices for the mobile-voice basket and the mobile-data basket are very similar, across levels of development and regions, but due to the vast disparities in purchasing power, mobile telephony and Internet access have remained too expensive for many in the developing world; Nigeria inclusive. In 2018, the UN Broadband Commission for Sustainable Development set as a target for 2025 that entry-level broadband services should be made affordable in developing countries, corresponding to less than 2 percent of monthly Gross National Income per capita (GNI p.c.).

ITU (2020) observed that the average cost of a mobile-data basket of 1.5 GB in Least Developed Countries (LDCs), Land Locked Developing Countries (LLDCs) and Small Islands Developing States (SIDS) was substantial. This suggests that affordability is just one among many factors hampering Internet uptake in developing countries and Least Developed Countries. Hence, selling the idea of blended teaching and learning to a group of teachers and learners who cannot afford the high cost of subscription for data required for internet access could be quite taxing.

4.7. Difficulty in Seeking Assistance from the Lecturers and Accessing Feedback

Before education moved completely online, getting help from a teacher or lecturer was as simple as raising one's hand or waiting behind after class. With blended teaching and learning, that face-to-face interaction becomes drastically reduced or greatly diminished. Preservice teachers are likely going to find it difficult to walk up to their lecturer's desk to ask a question, and lecturers might find it difficult to call up their students to give them feedback. STEPS (2020) observed that college students can't wait after class or stop in at a professor's office for extra help, whereas, in-person interactions are very important.

5. Strategies for Coping with the Challenges of Integrating Blended Teaching and Learning into Teacher Education

Teacher education is very vital in all countries of the World because the production of every work force in any country is the responsibility of teachers. Hence, Akinbode and Abati (2019) remarked that effective teacher preparation is a very vital instrument for the development and transformation of any nation. They also asserted that good teacher preparation programmes will give birth to quality teachers who in turn will produce quality school leavers.

This will however be difficult to achieve where reforms are constrained by some of the challenges earlier highlighted in this paper. Coping with these challenges therefore demands a consideration of some strategies, particularly if the issue of blended teaching and learning integration into teacher education is accepted as a unique reform. Such strategies are interventions and techniques that can help promote best practices and meet up with the imperatives for 21st century education which are increased capacity and efficiency, improved effectiveness, easy accessibility and a competitive mindset. Some of these strategies as they target the teacher trainers, teacher trainees, teacher education curriculum development agency and relevant stakeholders, are highlighted and discussed in the new few paragraphs.

5.1. Teacher Trainers

The teacher trainers need to understand and demonstrate their belief in their changing roles and re-think their professional identity in the digital age, while considering the human side of digital technologies as required in blended teaching and learning. They also need to reconsider the degree to which they have formulated conscious plans to perform or not perform some specified future behaviour, particularly when it comes to embracing and implementing innovations.

Teacher trainers can ease the challenge of poor internet access to students by providing downloadable education materials that the preservice teachers can work on from home. Working with the preservice teachers to have downloadable slideshows, videos, assignments, and maybe even examinations, will allow users to connect to the internet just for the duration of the downloads, and they can then return to the hostel and work on schoolwork there, which may be a more comfortable location. Once the content has been downloaded, students can access it without needing a continuous connection to the internet, making it possible to complete assignments from anywhere.

The teacher trainer and the relevant superintending agency, that is, the National Commission for Colleges for Education (NCCE) must embark on a review of teacher education curriculum to ensure that it supports the development and effective implementation of blended teaching and learning. Likewise, conscious effort should be made to evaluate the methodologies recommended for use in the preparation of teachers for eventual use on graduation. Lecturers who train teachers would be expected to discard lecture method and put into practice those pedagogical approaches they are transferring as knowledge and skills to trainee teachers.

Demonstrating their support for this, Iwuamadi and Anyanwu (2016) suggested that the pedagogical practices to be considered for use in blended teaching and learning should embrace the use of information communication technology; facilitate teachers' life-long learning, offer teachers multiple sources of learning, encourage a local and global network of learning, and should equally be enhanced with learning World-wide IT pedagogical environment and other meaningful learning infrastructures.

New attitudes around using technology, such as adaptability and responsiveness to external environments, as demonstrated by unexpected circumstances such as the current COVID-19 outbreak, need to be included in the digital competencies of teachers. Teacher trainers will need to learn how they can integrate technology while blending the traditional teaching practices with their use of familiar technology for teaching and learning.

5.2. Preservice Teachers

Limited internet access can be frustrating, especially when one is trying to take multiple classes and complete a lot of assignments at once. Preservice teachers might need to keep their lecturers up-to-date about their internet situation so

that they can fashion out ways of helping them out may be through getting them downloadable assignments and videos. Also, they require knowledge of different pedagogical approaches and professional development support in redesigning teaching and learning.

Teachers in training can be encouraged to form virtual study groups so as to regular connect over a video platform such as Zoom or Google where they can study and discuss their classes together, so as to complement blended teaching. Studying with their peers will allow students to relearn the delivered lesson content in different ways. The virtual study group activities can include watching a lecture from the lecturer, creating an online quiz game, or creating a shared document that lets multiple students collaborate on a paper.

5.3. Other Relevant Stakeholders

National service providers, international partners, NGOs, the private sector and ICT providers to consider giving swift and enhanced support required for rallying behind teacher training institutes for the provision of internet services and data at little or no cost for blended teaching and learning. Relevant government agencies would also need to initiate policies that can help the mass people of the country to enjoy affordable internet options, particularly for low-income earners and students.

Many businesses that are close to tertiary institutions e.g., colleges of education can help keep their internet signals on or expand them with signal boosters to include their parking lots a lifeline for students to gain access to the internet. Colleges can create certain parking lot hours and social distancing guidelines, for pre-service teachers to gain access and use such for online learning or assignment.

This will be helpful for students and teachers alike whose colleges are around areas where Wi-Fi is spotty at best. Students can take their laptops or phones to these Wi-Fi hotspots which allow them to connect and do their schoolwork, watch lectures, and take tests. The Speaker of the Federal House of Representatives Wi-Fi Hotspot Project in tertiary institutions in Lagos State is a good example of such intervention.

There is an urgent need for government to re-design education provision and professional development programmes for teachers. This is due to the fact that the old provisions for traditional education settings do not offer a proper set of knowledge and skills in the digital education environment. Thus, the training for digital competency at the teacher education level should not only focus on general technology knowledge, but also provide more practical experiences to utilize digital devices as well as hands-on training to deal with online teaching and learning devices while combining F2F and blended teaching and learning.

6. Conclusion and Recommendations

Effective implementation of blended teaching and learning at the College of Education level demands that teacher education in the 21st century and in the post COVID-19 era should provide opportunities for teachers to have appropriate knowledge and skills to meet the new needs of school and society, most particularly as a result of increasing globalization and the use of information and communication technologies. The integration requires a proactive paradigm shift from what it used to be to what it should be. Teacher education should focus on training teachers to be reflective in practice, be active in learning and be innovative, creative and partnership building. Hence, teacher trainers as well as their trainees need a change of attitude towards greater accountability and optimism in order to bring about change in school social practice.

Newly recruited teachers should undergo a systematic induction programme that will provide them ample opportunities to practise blended teaching and learning so as to make adequate provision for professional development of the teachers. At the teacher preparation level, the teacher trainers should be regularly encouraged to go refresher courses to update their knowledge and skills to accommodate new developments aimed at improving their instructional delivery skills in tandem with current reforms in the teaching profession.

Since the attitude and perceptions of the teachers are critical to how effectively an innovation is implemented, gauging how teachers perceive this innovation and its efficacy as a tool for enhanced teaching and learning will be very germane for the introduction and implementation of blended teaching and learning in a post COVID-19 pandemic era in the College of Education system in Nigeria.

By embracing the use of blended teaching and learning, teacher preparation programmes will help teacher trainers learn how to tap into their students' interests and familiarity with a range of information communication technology needed to encourage and facilitate an engaging learning environment, both virtually and physically. Blended teaching and learning should therefore be seen as an effective learning strategy that can open up room for teachers from various educational communities to connect with the world through technological advances.

7. References

- i. Adeosun, O (2014) Teacher education programme and the acquisition of 21st century skills: issues and challenges in Nigeria. home.hiroshima-u.ac.jp/cice/2014/03
- ii. Akinbode, O. Samuel & Abati, O. Adekunle (2019). Teacher preparation and teaching professional competence among Federal Colleges of Education graduates in south-west Nigeria. *Journal of Education and Human Education* March 8(1) 93-105
- iii. Akinwunmi, F. S. (2017). Management of teacher education in Nigeria: Issues, problems and remedies. <https://citeseerx.ist.psu.edu/> Awal, Kurnia, Putra Nasution et al (2021). Face to Face Learning vs Blended Learning vs Online Learning (Student Perception of Learning) J. Phys.: Conf. Ser. <https://iopscience.iop.org/article/10.1088/1742-6596/1783/1/012112/pdf>

- iv. Bates, Tony (2020). Why, 'logically', online learning is superior to face-to-face teaching <https://www.tonybates.ca/2020/10/30/why-logically-online-learning-is-superior-to-face-to-face-teaching/>
- v. Berga, K. A. et.al. (2021). Blended learning versus face-to-face learning in an undergraduate nursing health assessment course: A quasi-experimental study. *Nursing Education Today*. 96. January
- vi. Blissitt, A.M. (2016). Blended learning versus traditional lecture in introductory nursing pathophysiology courses *J. Nurs. Educ.*, 55 (4), 227-230, 10.3928/01484834-20160316-09 Google Scholar
- vii. Cherechi, I. H. (2018). The Challenges of Teacher Education in the 21st Century Nigeria. *PEOPLE: International Journal of Social Sciences*, 4(1), 716-727.
- viii. Choi, H.; Chung, S.-Y.; Ko, J. (2021). Rethinking teacher education policy in ICT: Lessons from emergency remote teaching (ERT) during the COVID-19 pandemic period in Korea. *Sustainability*, 13, 5480. <https://doi.org/10.3390/su131054>
- ix. Christensen Institute. (2017). Blended learning definitions. <http://www.christenseninstitute.org/blended-learning-definitions-and-models/>
- x. Dangwal, K. L. (2017). Blended learning: An innovative approach. *Universal Journal of Educational Research*, 129-136. <http://files.eric.ed.gov/fulltext/EJ1124666.pdf> Hsu,
- xi. Duhaney, Devon C. (2012). Blended learning and teacher preparation programs *International Journal of Instructional Media* 39(3) [https://sites.newpaltz.edu/ncate/wp-content/Durosaro, D.O. \(2006\). Teacher education in Nigeria: Past, present and future challenges. The Pacesetter Journal. Oyo State College of Education.](https://sites.newpaltz.edu/ncate/wp-content/Durosaro, D.O. (2006). Teacher education in Nigeria: Past, present and future challenges. The Pacesetter Journal. Oyo State College of Education.)
- xii. Hsieh, S.I. & L.L (2011). Factors affecting metacognition of undergraduate nursing students in a blended learning environment *Int. J. Nurs. Pract.*, 20 (3) (2014), pp. 233- 241, 10.1111/ijn.12131 Google Scholar
- xiii. Hughes, G. (2021). Overcoming COVID-19 challenges successfully at the University of Regina. <https://www.studyinternational.com/news/>
- xiv. ITU. (2020). Measuring Digital Development: Facts and Figures. ITU Development Sector <https://www.speedtest.net/insights/blog/tracking-covid-19-impact-global-Internet-performance>
- xv. Iwuamadi, F N & Anyanwu, C U (2016) 21st century innovation best practices in Practices in pre-service teacher education: Nigerian perspectives. *International Education Journal*, 10(1), 51-61 [5]
- xvi. Johnston, S. et.al. (2020). Blended learning versus face-to-face learning in an undergraduate nursing health assessment course: A quasi-experimental study. *Nursing Education Today*. 9, January <https://www.sciencedirect.com/> Google Scholar
- xvii. Kathy Quirk Student teachers overcome challenges created by pandemic. UWM Report May 5 2020 <https://uwm.edu/news/>
- xviii. Kanno, T. N. & Onyeachu, J.A. E. (2019). Teacher preparation at college of education and development in Nigeria beyond 2020. www.globalacademicgroup.com/pristine
- xix. Kim, S. (2020). Online Classes for Future Schools, From a Long-Term Perspective. *Edu Donga*, 4, 10. http://m.edu.donga.com/news/view.php?at_no=20200410111915223380
- xx. Leo Learning (2018). Blended Learning vs ELearning and Face-to-Face Training <https://www.leolearning.com/blog/learning-content/>
- xxi. Li, C. He, J. Yuan, C. Chen, B. & Sun, Z. (2019). The effects of blended learning on knowledge, skills, and satisfaction in nursing students: a meta-analysis *Nurse Educ. Today*, 82 (2019), pp. 51-57, 10.1016/j.nedt.2019.08.004 Google Scholar
- xxii. McCutcheon, K., Lohan, M., Traynor, M., & Martin, D. (2015). A systematic review evaluating the impact of online or blended learning vs. face-to-face learning of clinical skills in undergraduate nurse *J. Adv. Nurs.*, 71 (2) 225-270, 10.1111/jan.12509 Google Scholar
- xxiii. Meyer, K. A. (2003). Face-to-face versus threaded discussions: The role of time and higher-order thinking. *Journal of Asynchronous Learning Networks*, 7(3), 55-65.
- xxiv. Nigel V Smith (2013). Face-to-face vs. blended learning: Effects on secondary students 'perceptions and performance' *Procedia - Social and Behavioral Sciences* 89 (2013) 79 – 83
- xxv. Noble, D. (2002). *Digital diploma mills: The automation of higher education*. New York: Monthly Review Press.
- xxvi. Osuji, Christopher O, & Taiwo, A.O. (2019). Restructuring teacher education in Nigeria towards the challenges of the 21st Century teaching and learning process. *World Journal of Innovative Research (WJIR)* 6(3), March 48-54
- xxvii. Paulley, F. Godgift & Ikioumoton, G. (2015). The policy and practice of preparing the Nigerian teacher for the challenges of the new generation: The national policy on education in focus. *IOSR Journal of Research & Method in Education (IOSR-JRME)* (5) 1 Ver. III (Jan - Feb.), 12-22 www.iosrjournals.org DOI: 10.9790/7388 05131222
- xxviii. Perez, A. C. (2021). Faculty overcome challenges posed by online teaching during pandemic. *The Oracle* <http://www.usoracle.com/2021/02/22/>
- xxix. Rozeboom, A.M. (2017). Blended learning versus the traditional classroom model (Master's thesis, Northwestern College, Orange City, IA). http://nwcommons.nwciowa.edu/education_masters/

- xxx. Salamonson, Y. & Lantz, J. (2005). Factors influencing nursing students' preference for a hybrid format delivery in a pathophysiology course. *Nurse Educ. Today*, 25 (1) (2005), pp. 9-16, 10.1016/j.nedt.2004.09.006 Google Scholar
- xxxi. Schreiber, Birgit and Ludeman, Roger B. (2020). COVID-19 challenges for student affairs and services globally University World News.
- xxxii. Smith, Nigel (2013). Face-to-face vs. Blended learning: Effects on secondary students' perceptions and performance. *October Procedia - Social and Behavioral Sciences* 89:79-83 DOI:10.1016/j.sbspro.2013.08.813
- xxxiii. Spurway, Ambar (2020) Beyond the COVID-19 crisis: The student perspective *Contact Magazine* <https://stories.uq.edu.au/>
- xxxiv. Stacey, Elizabeth and Wiesenber, Faye, (2020). A Study of Face-to-Face and Online Teaching Philosophies in Canada and Australia 22(1) <http://www.ijede.ca/index.php/jde/article/view/7/488>
- xxxv. STEPS (2020). Overcoming the Challenges of Online Learning During COVID-19 <https://www.publicservicedegrees.org/>
- xxxvi. SUNY (2020). Traditional (In-Person) Teaching, Face-to-Face vs. Online Instruction. SUNY Broome Community College <https://www3.sunybroome.edu/online/students/face-to-face-vs-online-instruction/>
- xxxvii. The University of the West Indies (2021). What is the difference between online and blended learning? <https://sta.uwi.edu/cetl/what-difference-between-online-and-blended-learning>